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# PAPER TRADE JOURNAL

VOL. 122 NO. 20 MAY 16, 1946

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Bemis Brothers Bid for Tomahawk Plant

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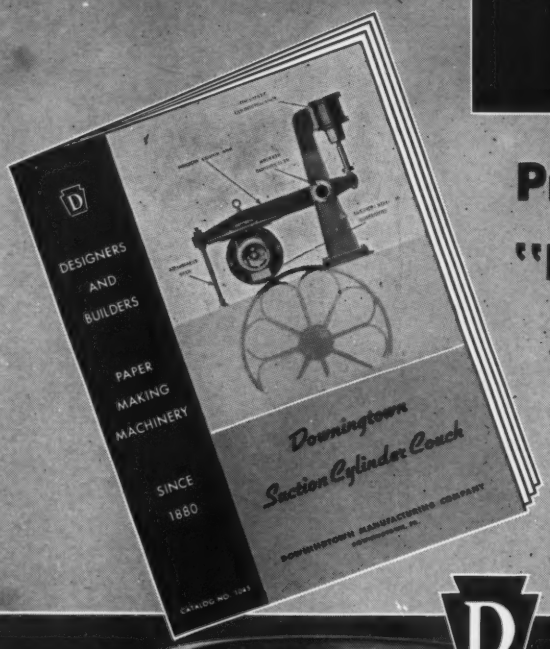


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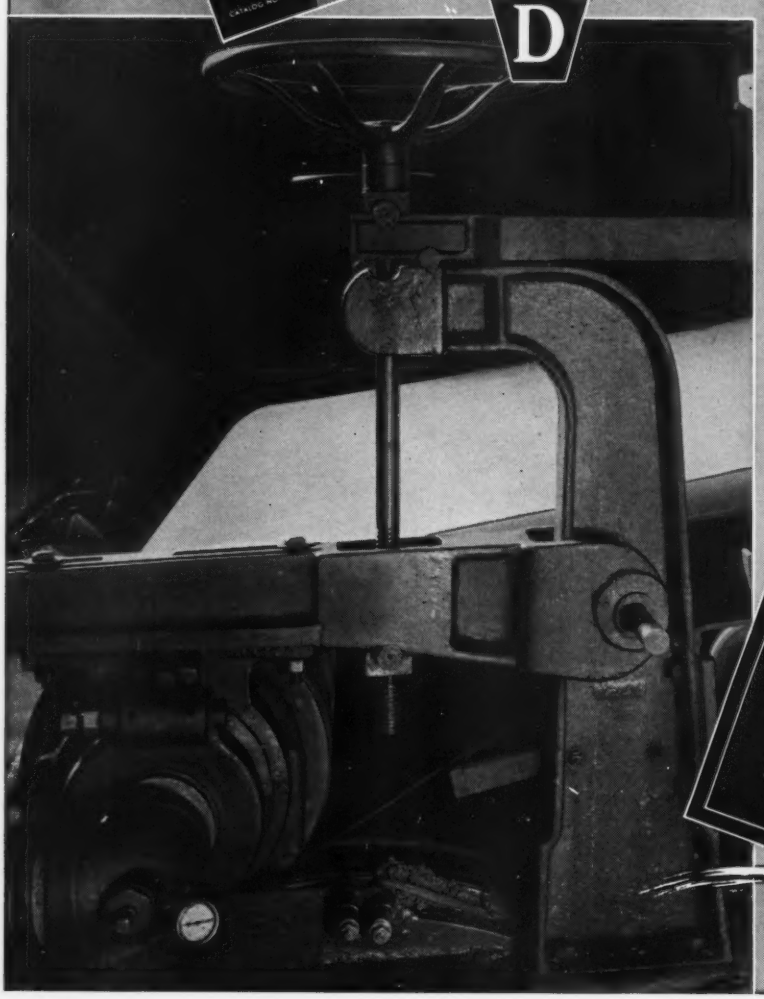

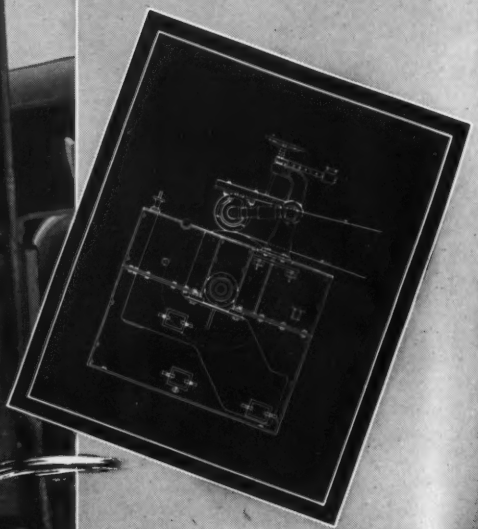

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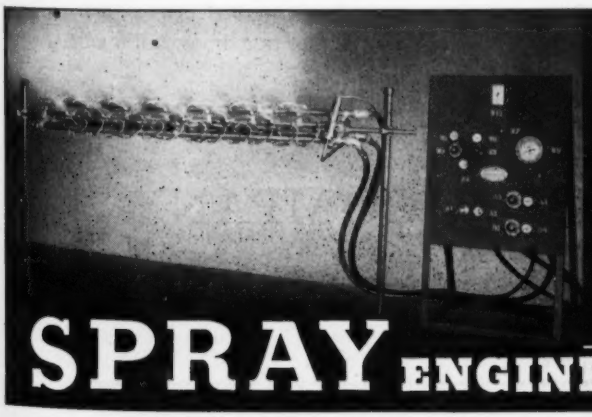

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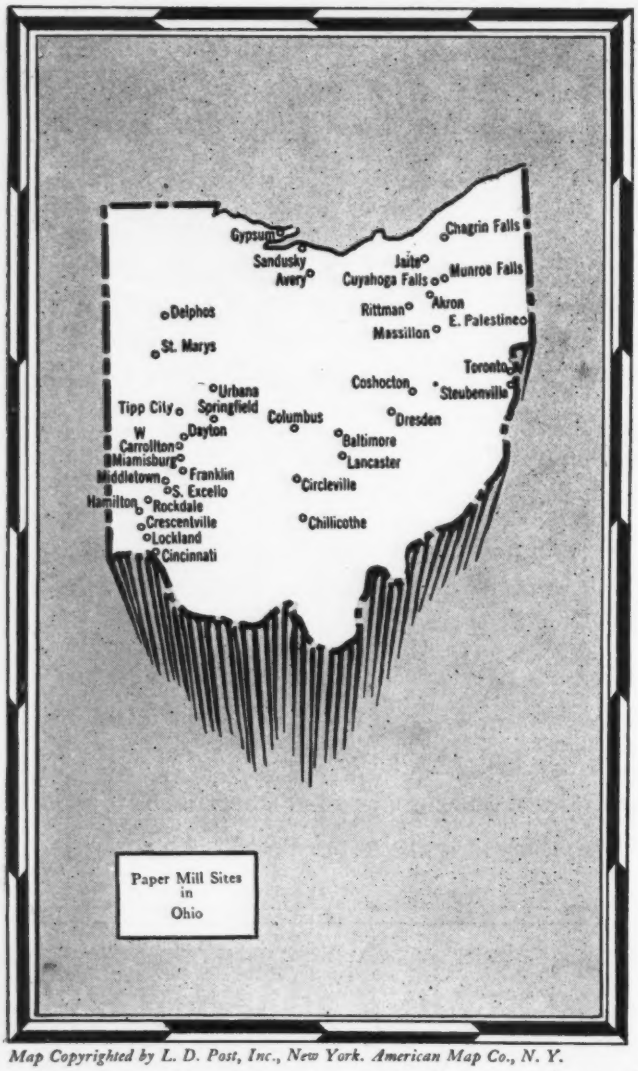
**No. 18 PUBLISHED BY DRAPER BROTHERS COMPANY • CANTON, MASSACHUSETTS**

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## HIGH LIGHTS:

Papermaking began in Ohio as a handcraft in the year 1807. The first mill belonging to a man named Bever, was in Fawcette Town (now East Liverpool), near the Pennsylvania border. From this small beginning Ohio's paper industry has grown until the State ranks fifth in the amount of paper made annually in the United States.

Papermaking is practised in 34 different locations all over the State and the variety of product is amazing — everything from tissue to wallboard; unusual specialties as well as staple lines. There you will find the largest manufacturer of coated book paper in the world and two of the oldest companies which have been in continuous existence — in this country, The Mead Paper Company and the Beckett Paper Company, both approaching their centenary. Tradition and progress go hand in hand in Ohio's paper industry.

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PAPER TRADE JOURNAL
Vol. 122, No. 20 May 16, 1946
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# Wisconsin Mills Await Effect Of Truce in Coal Stoppage

APPLETON, Wis.—Announcement of the two weeks truce in the coal strike and the subsequent lifting of the government embargo on freight shipments came too late last week to clarify what the effect will be on Wisconsin's paper industry, although it seems evident that any changes need not be as drastic as was indicated earlier during the week.

**Kimberly-Clark Corporation, Neenah,** had announced Tuesday, May 7, that curtailments imposed by the coal strike necessitated a five-day week until further notice and that a continuation of the strike might force a complete shutdown. At that time, the company said that its decision had been postponed as long as possible, in the hope that operations could be continued without curtailment. The corporation reported a great many of its suppliers of strategic raw materials were on curtailed operations or shut down.

At Marinette, Wis., the Marinette Paper Company announced that it expected to remain in operation, but the Badger Paper Mills, Inc., Peshtigo, was considering a shutdown to be effective May 18.

**Marathon Corporation, Rothschild,** whose production consists to a large degree of food and drug packages, which were not affected under the freight embargo, did not anticipate an early curtailment. Paper mills in the Wisconsin River Valley, however, as in the Fox River Valley, were concerned over procurement of needed raw materials. The Minnesota Mining and Manufacturing Company, Wausau, maker of abrasive paper, also feared a shutdown.

Folke Becker, president of the Rhinelander Paper Company, Rhinelander, feared a shutdown would be necessary within ten days, as the company's coal supply would be exhausted after that period.

Menasha Wooden Ware depends for the bulk of its coal on the John Strange Paper Company, Menasha. The latter had one small machine shut down. However, Donal Shepard of the Wooden Ware Corporation, stated, "We have three days coal supply here but if shipments stop from Green Bay, Stranges may shut down and then we would have to cease operations."

Nathan Bergstrom, executive of the Bergstrom Paper Company, Neenah, which also supplies the Badger-Globe mill of Kimberly-Clark Corporation with power, said, "We have stocks but when and if coal ceases to be shipped from the docks, we couldn't last too long."

R. M. Sensenbrenner of the George A. Whiting Paper Company, Menasha, reported that the company would be seriously affected by lack of coal when it ceases to be available from the docks.

## Mitchell Named Head of All Riegel's Sales

All present officers were reelected and A. P. Mitchell, corporation secretary, was appointed general sales manager, at a recent meeting of the Board of Directors of the Riegel Paper Corporation.

Mr. Mitchell joined Riegel in 1923 as a clerk in the order department and later, for many years, covered both the Southern and New England Territories on the regular sales staff. He was appointed sales manager of the company's coating and converting divisions in 1934 and was elected secretary of the corporation in 1930 and a director in 1942.

COLA G. PARKER
Re-elected Kimberly-Clark president

## Newsprint Output Hits April High

Newsprint production in Canada, according to the News Print Service Bureau, amounted to 337,862 tons and shipments to 348,103 tons during April 1946. Production in the United States was 67,964 tons and shipments were 67,698 tons. The output in Newfoundland was 29,495 tons and shipments were 31,126 tons, making a total North American production of 434,421 tons and shipments of 446,927 tons. Total production in April 1945 was 332,925 tons and shipments were 340,188 tons. North American production in April 1946 was greater than that in any preceding April.

The Canadian mills produced 295,153 tons more in the first four months of 1946 than in the first four months of 1945, which was an increase of 29.1 percent. The output in the United States was 17,652 tons or 7.3 percent more than in the first four months of 1945; in Newfoundland production was 11,488 tons or 10.7 percent more, making a total increase of 324,293 tons, or 23.8 percent more than in the first four months of 1945.

Stocks of news print paper at the end of April were 119,067 tons at Canadian mills, 6,618 tons at United States mills, and 70,585 tons at Newfoundland mills, making a combined total of 196,270 tons compared with 208,776 tons on March 31, 1946, and 161,727 tons at the end of April 1945.

## Kimberly-Clark Again Elects Cola Parker President

NEENAH, Wis.—Cola G. Parker was reelected president at the annual meeting of the Kimberly-Clark Corporation board of directors. All other officers also were reelected.

W. R. Kellett was appointed as an additional assistant vice president and will continue his present duties as general superintendent. Ernst Mahler remains executive vice president; Charles H. Sage, John R. Kimberly, H. G. Boon and W. H. Clifford, vice presidents; J. Frederick Hunt, secretary-treasurer; R. W. Lyons, C. F. Jenkins, R. M. Watt and Mr. Kellett, assistant vice presidents; J. Leslie Sensenbrenner, asst. secretary-treasurer.

The board of directors includes Messrs. Boon, C. B. Clark, Clifford, John M. Hancock, Walter Kasten, Kellett, Kimberly, Mahler, Parker, Sage, F. E. Sensenbrenner, F. J. Sensenbrenner and S. F. Shattuck.

# Coal Shortage Halts Chicago Progress

CHICAGO—The paper trade spent a part of the past week trying to get used to the effects of the latest John Lewis strike. The power conservation order in the entire Chicago area saw industrial plants limited to twenty-four hours of electric power a week and retailers limited to the use of electricity only from the hours of two to six o'clock. Office workers felt the full brunt of the strike when they were required to limit their work—unless they wanted to walk up a long flight of many stories—to the 2 to 6 period!

Chicago lived a long long week during the seven days just passed. Whether it is to continue its current predicament or go into a worse tragedy depends upon the outcome of negotiations proceeding during the two weeks truce between miners and coal operators.

Here, the paper industry suffered with the rest. Waste paper and scrap dealers found shipments difficult and business hour restrictions hard. Badly needed paper and allied products found the going "tough" as Chicago conserved its meager coal pile. Some manufacturers of paper and paper products closed their doors rather than attempt to work under the 24 hour a week program laid down by the Illinois Commerce Commission. Local steel output was cut to 32.9 percent. Thousands of people were thrown out of work, millions of dollars lost in payrolls, weeks of valuably needed materials for the full employment program based on production lost as Illinois, worst hit State of the nation, struggled along.

The great crisis, described by the head of the Chicago Association of Commerce as the "greatest catastrophe since the Chicago fire", threw a reported two million out of jobs. The paper trade discussed little else in the week, seeing its already slim trickle of production further jammed and, in instances, halted. It was the "news" in Chicago. It will be the "news" next week and until Congress can devise ways and means to never let it happen again.

Otherwise, the industry continued to report the same story of tremendous demand with only slightly increased production to handle it. There was some indication that lines of paper were being extended and that recent government orders had had some good effect in broadening mill production from a selection standpoint. The shortages continued acute with all prices knocking at OPA ceilings which were reported as increasingly hard to live under.

The waste paper trade indicated that while collections were up they were by no means sufficient to handle mill requirements. Meanwhile, the power shortage was beginning to concern many industries dependent upon rail shipments for supplies of raw materials. If the strike continues much longer, the trade here feels that freight shipments are going to be very lean indeed, thus adding to the already critically short condition of the market.

## Costello Retires July 1 From Huber Connection

John E. Costello, well known throughout the paper and printing industry, and since 1931 in charge of paper clay sales for the Chicago Office of J. M. Huber, Inc., will retire this year on July 1. Mr. Costello has been closely identified with the paper and printing industry for many years. Associated first with the W. F. Hall Printing Company, he joined J. M. Huber, Inc. in 1921 as Chicago Branch Manager, and for the next several years was active in the sale of the company's ink products.

When the Huber Company entered the production of paper clays in 1931, Mr. Costello took over the Middle Western territory and has since maintained close contact with the paper mills in Wisconsin and Michigan.

## St. Regis Lets Contracts For Vancouver Plant

VANCOUVER, B.C.—St. Regis Paper Co., has now started work on erection of its new plant at Arbutus and West Eleventh Avenue. Contract valued at $200,000 has been placed with the Dominion Construction Co., Vancouver, according to E. P. Engness, district manager for St. Regis.

The building will be a two-story reinforced concrete construction and will occupy half of a city block. The other half of the block has also been purchased by the company and a second unit will be erected at a later date.

Equipment in the new factory is valued at a further $200,000, bringing the total investment to $400,000. On completion of the building, the company will move from its present plant at 146 West Second Avenue.

## Canadian Newsprint Exports Rose Sharply in March

MONTREAL — Newsprint exports showed a sharp rise in value in March, as compared with March, 1945. The total value for the month reached $19,527,000, as against $14,125,000 in the same month a year ago. The value of exports of wood pulp, however, fell to $8,660,000 from $9,845,000. Returns just available show that overseas shipments of newsprint for the first three months of 1946 totalled 849,476 tons, as compared with 666,702 tons in the first three months of 1945. Of this amount the United Kingdom took 25,564 tons, Australia 23,440 tons, and Argentina and Brazil each took rather more than 10,000 tons.

# Diplomacy Involves Canadian Newsprint

MONTREAL—Canadian newsprint has been figuring in the diplomatic news during the past week, first in connection with the movement in Yugoslavia for the annexation of Trieste by that country, and secondly in connection with the rough passage which the loan to Britain has been having in the United States Congress.

In connection with the first-named, a cable from Trieste reported that Allied military authorities had impounded 120 reels of Canadian newsprint marked "UNRRA Supplies for Yugoslavia," which had turned up in Trieste for use by two newspapers there both of which are favorable to Premier Marshal Tito, and by another Trieste newspaper which calls itself independent.

Canadian newsprint became involved with the U. S. loan to Britain, when a cable from London quoted Sir Walter Layton, chairman of the British Rationing Committee of the Newsprint Supply Company, as stating, at the annual luncheon of the Newspaper Society, that British newspapers will not be able to expand to pre-war dimensions unless the American loan to Britain is passed by Congress. As a consequence, he declared the contracts made with Canadian manufacturers for the supply of newsprint in large quantity might not be fully implemented.

## Kimberly-Clark Shifts Fithian and Haggren

NEENAH, Wis. — Kimberly-Clark Corporation has announced two changes in its sales organization. Scott B. Fithian has been appointed assistant sales manager of paper sales in the central district, with headquarters in Chicago. He has been district sales manager of the creped wadding division, eastern district, with headquarters in New York City, since 1928. Succeeding him as eastern district sales manager, creped wadding division, is Fred R. Haggren, formerly assistant to R. B. Sawtell, sales manager, creped wadding division, Neenah.

## Gheen Talks to Traffic Club

APPLETON, Wis.—James E. Gheen, New York, public relations counselor, was scheduled as the principal speaker Monday evening, May 13, at a meeting of the Fox River Valley Traffic Club at the North Shore Country Club. The meeting, starting with a 7:15 dinner, was attended by about 250 members, transportation executives and industrial executives of the Fox River Valley. Members of the committee in charge of arrangements included Leo Schubart, secretary-treasurer of the Neenah Paper Company, and R. H. Lorenz, operating traffic manager of Marathon Corporation, Menasha, Wis.

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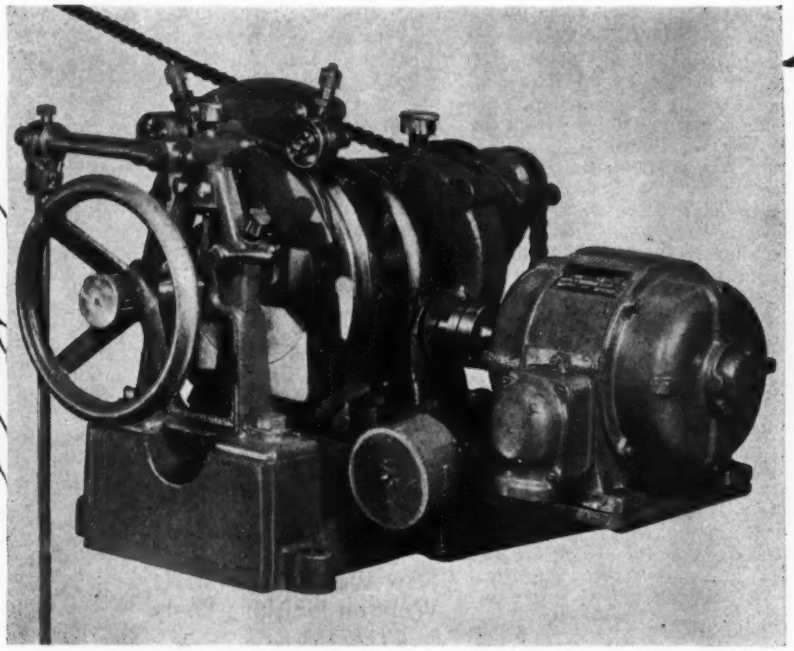
## STOCK CONSISTENCY
## WITH BIRD REGULATORS
## *On The Job...*



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Let us mail you a bulletin containing diagrams and descriptions of many interesting applications. Write

**BIRD MACHINE COMPANY**
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## Escanaba Reports Building Progress

ESCANABA, Mich.—Details of a modernization program of the Escanaba Paper company, which will eventually result in between 50 and 75 new operating jobs, and boost the total number of permanent employes to 500 and the annual payroll to $1,250,000, have been made public by M. N. Smith, company president.

It may be more than a year, officials explained, before the program is completed.

Most of the work was under way before government restrictions were imposed on new construction. It is understood, however, that one key building cannot be started until authorized by the Detroit office of the Civilian Production Administration.

Construction at the paper mill was started in 1944. The tail race below the power house was relocated in the summer of that year to make room for several of the new buildings. Special permission was obtained from the War Production Board for the new office building which was erected on reclaimed ground by Erling Arntzen who sublet parts of the work to other Escanaba contractors. This modern brick building was started last summer and is now in use. On the site where the old office stood a new finishing and paper storage building is nearing completion.

Further down the river foundations for a group of new buildings extend well above the ground level. In that area will be located a new storage building where sulphite pulp will be processed by the most modern equipment, a chemical building, and a groundwood bleach plant. The bleach plant will employ a new process developed by the DuPont company and will be a five-story structure. Permanent concrete, brick and steel construction is being used throughout.

On the north side of the mill, out of sight from the road, an addition to the main paper mill building has been completed and is already in use. Further changes in the paper making operation are scheduled. As soon as equipment can be obtained, it is planned to apply a special coating during the manufacturing process so as to produce the type of high grade paper found in the better magazines.

The river bank below the mill has been cut back to provide space for an extension to the railroad tracks serving the property. Work started on this part of the project last fall. There is now adequate room for any additional expansion in production facilities which be necessary in the future.

Company officials explain that the modernization program was behind schedule due to strikes in the steel, coal, and special equipment industries. Under the circumstances no accurate completion date can be estimated at this time. It is expected, however, that more than 50 permanent operating jobs will open up by the Spring of 1947. At present about 100 men are employed on the construction crews and more will be required when authorization is received from the government to start the coating building. This structure will contain special clay processing mixers and must be completed before it will be possible to operate most of the other equipment now being prepared for installation.

## Duplicate Tax Bogey Threatens Canada

MONTREAL—In common with business in general, there is considerable disappointment in pulp and paper circles here at the fact that the Dominion-Provincial Conference, which for nine months had been trying to hammer out a common agreement on taxation, has broken up without any decision being arrived at. The conference was called by the Dominion authorities mainly for the purpose of renewing the wartime agreement whereby the Dominion was the sole collector of income and corporation taxes, with substantial subsidies to the provinces in compensation for their abstaining from imposition of such taxes.

Unless an arrangement is arrived at meanwhile, it seems certain that when the present agreement expires some months from now, individual and corporation income taxes will again be imposed by both the provinces and the Dominion, with in many cases the imposition of a third income tax by certain municipalities. Such duplication and triplication of taxes prevailed prior to the wartime agreement. However, hopes are not yet abandoned that a compromise will be effected.

## New Westminster Starts Work on Finishing Room

VANCOUVER, B. C.—Representing an outlay of approximately $140,000, construction is now being commenced on a new finishing room at the New Westminster Paper Company, Ltd. The general contractors, Dominion Construction Co., Ltd., Vancouver, only recently completed building a new $15,000 fuel bin at the Royal City firm's plant as a preliminary to starting the larger project.

Pile driving for foundations of the new finishing room is being handled by Fraser River Pile Driving Co., Ltd., New Westminster.

To be erected at the company's plant at 16th Street and 5th Avenue, the new building will be a three and one-half story reinforced concrete structure measuring 144 by 111 feet. New machinery will be installed and overflow from present plant buildings housed for processing of paper from the presses. One new process to be undertaken by the firm is manufacture of facial tissue.

## Bemis Brothers Bid for Tomahawk Kraft Plant

WAUSAU, Wis.—The Bemis Brothers Bag Company, St. Louis, Mo., has offered $23 per share, or approximately 50% more than recent selling prices, for stock of the Tomahawk Kraft Paper Company, Tomahawk, Wis. Previously, the National Container Company, New York City, has been revealed as interested in purchase of Tomahawk, the bid being $21 per share.

Bemis has sent a letter containing the offer to all Tomahawk stockholders. A full page advertisement also was published last week at Wausau. Total value of the outstanding stock at the figure offered would be $3,719,675, the offer applying to the various classes of stock and stipulating that 51 percent of the total stock be available for purchase by June 30, 1946.

"If successful in the purchase, the Bemis plan is to continue operation of the mill substantially as it is now being operated and by the same able officers and staff of Tomahawk," the advertisement states.

"The Bemis company is a nation-wide organization and a leader in the production and sales of all types of shipping bags, consumer-size bags, etc. This company now owns six multi-wall bag factories, fifteen textile bag factories, four cotton mills, one bleachery, one papermill, one paper specialties factory and one ink mill. Thirty-three sales offices are located at strategic points across the United States.

"The Bemis Company was founded in 1858. It employs approximately 8,000 people; more than 1,000 of them have been with the company twenty years or more.

"We wish to purchase all the stock and we have now available at the First Wisconsin Trust Company, Milwaukee, $3,719,675.00, an amount sufficient to purchase 100% of all the outstanding Tomahawk stock."

The Tomahawk Kraft Paper Company, chartered in 1923, is an important factor in the country's kraft industry. Its modern pulp mill uses wood purchased from farmers and obtained from its own logging camp. Tomahawk's 73,000-acre forestation project has been termed one of the outstanding industrial jobs of its kind in America. In addition, it has extensive cutting rights and, through the Tomahawk Power Company, owns its own water power. Its principal products are wrapping paper and kraft specialties. Bemis Bro. Bag Company is one of the firm's oldest and largest customers.

**THE MEAD SALES COMPANY**
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*A reproduction of this incident from the fabulous life of Paul Bunyan—the sixth of a series—will be sent on request. It will contain no advertising.*

## Crown Zellerbach Seeks 12 Million Approval

PORTLAND, Ore. — Applications for permission to erect some $12,219,177 of new building, highlighted by a $10,986,119 expansion sought by Crown Zellerbach Corporation for its paper mill at Camas, Wash., have been filed with the Oregon district office of the civilian production administration. The Crown Zellerbach development would increase the Camas plant's production of high-grade specialty paper and would provide emplovment for 350 additional employes at an annual payroll of $944,600, the application said. Construction will cost $3,756,088 and equipment $7,230,031.

Crown Zellerbach last year filed application with the war production board for permission to build the plant addition, but with the war's end WPB returned it with instructions to proceed with obtaining materials, the CPA application said.

As a result, the firm had $2,635,752 of equipment on order when the government's building freeze order of March 26 was announced.

### Wholesale Trade Up 13 Percent For First Quarter of 1946

WASHINGTON, D. C. — Wholesaler sales of paper and paper products for the first quarter of 1946 totaled $20,818,000, a gain of 13 per cent over the corresponding 1945 quarter, according to the Bureau of Census, based on figures from representative firms. March sales totaled $7,297,000, 14 per cent higher than in February and the same increase over March a year ago. Inventories gained three per cent in March over February, and were 19 per cent higher than in March last year.

### Vets Get Call at Brower On Brown Sales Staff

CHICAGO—World War veterans are getting the "call" at the Brower Paper Company as that concern announces the acquisition of three such citizens. One, Melvin Schneider, is now assistant to the president of the company, A. J. Brower. Another, John Lacy, is in the sales force after a career as a torpedo bomber pilot and John Jonnasen, also of the sales department, was formerly identified with the Air Forces as a navigator and member of the Air Transport Command Ferry Division.

### Sapeyes Plan Big Session For Talk by Tinker

The western division of the Salesmens Association of the Paper Industry, will hold one of its monthly open meetings on Monday noon, May 27 at the Sherman Hotel. Guest speaker at that time will be E. W. Tinker, secretary of the American Pulp and Paper Association, who is expected to outline to a very interested audience the current conditions in the paper trade.

### North Carolina to Enforce Cord Measurement Law

RALEIGH, N. C. — Forester R. W. Graeber of the State College Extension Service, taking cognizance of the highly competitive scramble for both North Carolina pulpwood and timber that continues in every section of the State, warned last week that a State law requiring an exact cord measurement of 128 cubic feet for pulpwood becomes effective June 1. Mr. Graeber said that there have been reports of wide discrepancies of measurements in pulpwood transactions over the State. In most areas of the State, pulpwood is cut in five-foot lengths, he added.

## Powell River Reports Production Upswing

VANCOUVER, B. C.—Substantial increases in both the production and sales of newsprint during 1945 are revealed in the annual report of the Powell River Company which has just been released. According to the report newsprint sales in 1945 totalled 227,273 tons which is 36,199 tons more than the total for the previous year. Sales of sulphite pulp increased from 42,515 tons in 1944 to 43,440 tons last year.

Operating profits of the company for 1945 amounted to $6,231,002, as against $6,262,900 for 1944. Net operating profits were $1,954,607, in comparison with $1,876,375 for the year before.

Income taxes, in ratio to profits, were 60 per cent last year, while in 1944 they were 53 per cent.

Production of newsprint advanced 24,618 tons, from 163,171 to 187,789; wrapper paper was up from 3704 to 4143 tons; corrugating board 7563, against 7753; laminated products, up from 1409 tons to 1806; pulp, up from 38,580 to 38,758 tons.

Lumber output was down 2,529,000 board feet to 10,227,000, and logs, off 8,772,000 to 79,074,000 feet.

### Twin City Men Discuss Safety

MENASHA, Wis.—Off-duty accidents were discussed Tuesday evening, May 7, at a meeting of the Twin City Safety Council at the Valley Inn. Forty-one supervisors and foremen were present. Gordon Mortensen of Kimberly-Clark Corporation was discussion leader. Howard Aderhold of Marathon Corporation is general chairman of the council. Plant safety will be the topic at the next meeting for foremen and supervisors June 11 at Hotel Menasha, Menasha, Wis.

## Mead Plans 5 Million For Chillicothe Mill

CHILLICOTHE, Ohio—The Mead Corporation, Dayton, plans to spend between $4,000,000 and $5,000,000 in the near future in the expansion of facilities of its Chillicothe plant. This was made known late last week by George H. Mead, Chairman of the company's Board of Directors, during his annual address to the Mead Foremen's Club at their annual meeting here.

Mead said the development program is the result of an intensive study started more than two years ago by a committee of eight men. The investment in the Chillicothe plant will cover the improvement and complete modernization of paper machines and the consolidation of the two pulp mills into one large unit.

Expansion of power and water supplies and distribution also will come within the scope of the program which will benefit from past research, Mead explained.

The contemplated development, which is part of a total expenditure of $15,000,000 for the postwar expansion program of the Mead Corporation, should give Chillicothe the most modern and efficient book paper mill in the country, Mead told the foremen.

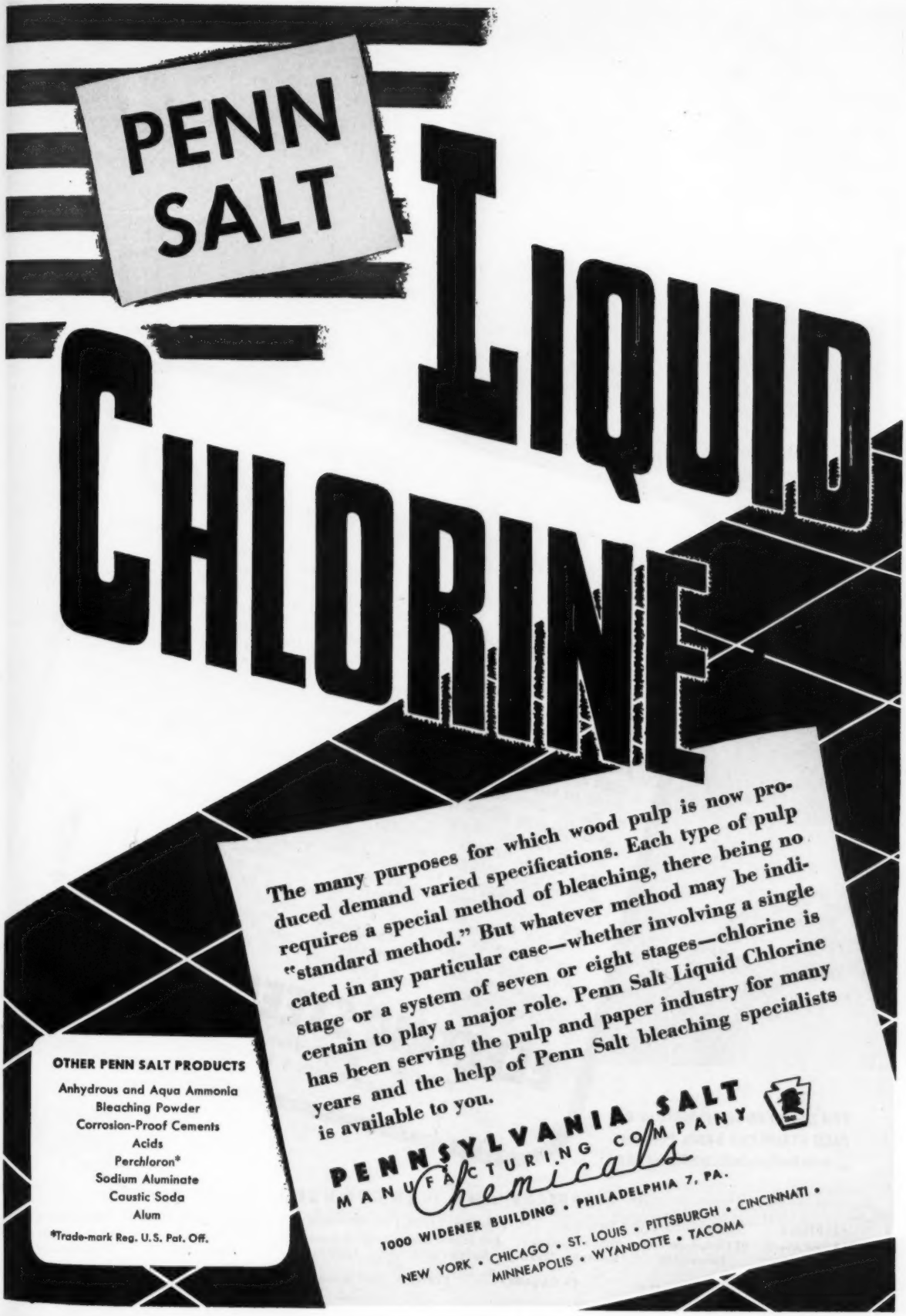
### Harris Seybold Expands Its Eastern District

CLEVELAND, Ohio—Appointing three Branch Managers, and a new office manager, J. W. Valiant, vice-president and eastern district manager for Harris-Seybold has instituted a program of reorganization and expansion in the Eastern District. The expanded program of sales and service, according to Mr. Valiant, was necessitated by the great demand for Harris-Seybold products, and is designed to better serve the Graphic Arts and allied industries in the East.

Newly appointed Branch Managers are S. E. Arnett, New York Metropolitan area; J. C. Doty, New England area; and R. H. Randall, Philadelphia area. W. I. Claire, has been appointed Eastern District office manager.

### Stirling Joins Oxford-Miami

HOLYOKE, Mass.—Thomas S. Stirling, former Holyoker who was scheduled to return to his post at the Wilimansett division of Hercules Powder Co. this month, has resigned from Hercules. He is going to Dayton, Ohio, to join the sales force of the Oxford-Miami Paper Co. Stirling was with Hercules here prior to the war. He was commissioned a lieutenant in the navy early in 1942 and was discharged last year with the rank of lieutenant commander. He returned to the Hercules organization and was assigned to the New York office. A few weeks ago he was transferred back to Holyoke.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The many purposes for which wood pulp is now produced demand varied specifications. Each type of pulp requires a special method of bleaching, there being no "standard method." But whatever method may be indicated in any particular case—whether involving a single stage or a system of seven or eight stages—chlorine is certain to play a major role. Penn Salt Liquid Chlorine has been serving the pulp and paper industry for many years and the help of Penn Salt bleaching specialists is available to you.
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ESCO stainless steel pipe fittings are made of the same Esco alloy 45 that is used with such good results in pulp mills throughout the United States and Canada. Teamed with Esco stainless pipe, they resist corrosion and reduce piping maintenance to the minimum.

Esco screwed pipe fittings are available in sizes from 1/8" to 3"—in 90- and 45-degree elbows, tee, cross, union, coupling, reducer, cap, plug, bushing and locknut. Complete range of sizes are carried in warehouse stock.

Esco flanged pipe fittings range in size from 1/2" to 10". Available in 90- and 45-degree elbows, tee, long radius ell, 45-degree lateral, and reducer. Faces are accurately machined to insure perfect gasket seat.

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Esco engineers have had years of experience in designing equipment for the pulp industry. You are invited to consult with them on any technical problem concerning the operation of your mill. Write us about your problem, and our facilities will be placed at your disposal.

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## Bartram Paper Products To Enlarge Its Plant

VANCOUVER, B. C.—A plant expansion program involving an expenditure of $250,000 has been drawn up by C. A. Bartram, president of Bartram Paper Products Co. Ltd., manufacturers of paper package products. The present plant at Woodland Drive will be expanded to cover half a city block from McLean to Woodland, fronting on the north side of Hastings Street. Plans call for an all-steel and concrete building, with a streamlined, modern facade employing brick, concrete, glass block and neon lighting.

The enlarged plant will house several new modern converting machines which will more than double its former productive capacity. The production of the enlarged plant will be abreast of modern packaging trends, which look to a greater use of paper containers to protect and preserve food products. A feature of the new plant will be the production of attractive, colorful printed cellophane packages for meat, poultry, fish, fruit, vegetables and food products, as well as many other articles at present being marketed unwrapped.

It is anticipated that jobs for 75 additional employees will be provided, lifting to 175 the number employed by the company.

The new plant building will be equipped with modern sample rooms, including quick freezing units for demonstration purposes. Architects are Townley & Matheson, Vancouver.

## Diamond Alkali to Build New Plant in Chicago

PITTSBURGH, Pa. — A $400,000 plant and warehouse will be built by Diamond Alkali Company, manufacturers of industrial alkalies, on a recently purchased 12-acre tract located at 69th St. and South Keeler Ave., Chicago. A contract for the plant's construction has been placed with Rust Engineering Co., Pittsburgh. The project has been approved by the Civilian Production Administration and actual construction is expected to start in June.

The main manufacturing plant of Diamond Alkali Co. is located at Painesville, Ohio. Diamond products used by industries in the Chicago area are distributed by the Benner Chemical Company, 20 North Wacker Drive.

## Coal Shortage Hits Grand Rapids Plant

GRAND RAPIDS, Mich. — American Box Board Co., with plants here and in Chicago, will close down May 20 because of a coal shortage, Walter S. Goodspeed first vice president and general manager, announced Thursday. The American Box Board Co. is the first local plant to announce it would close because of coal shortages.

Goodspeed said when the Box Board company is shut down, "we'll be at the bottom." There is only a remote possibility the plant may be able to remain open until May 27, Goodspeed said, but present plans call for a complete shutdown May 20. It may be difficult to resume operations for some time, even if the coal strike should end," Goodspeed said.

## Puget Sound Pulp & Timber Plans to Build Board Mill

BELLINGHAM, Wash. — Promising Bellingham a new "paper board mill" that will add a "very substantial number of workers to the city's payroll," the Puget Sound Pulp and Timber company has asked the city council for the vacation of portions of Army, Myrtle, Laurel and Bay streets at its waterfront plant site.

The letter to the council, telling briefly of the company's program to process its raw product into pulp board, was signed by Lawson P. Turcotte, executive vice president of the company. It was accompanied by blueprints showing the proposed site of the paper board mill and the portions of streets in the vacation request.

The new plant, more than a city block in length, would face on Laurel street, and would run from the east line of Army street to the center line of Bay street.

The Puget Sound Pulp and Timber company asks that Laurel street, from Army to Commercial; Bay street, from Laurel to Myrtle; Myrtle, from Army to Bay, and Army, from Laurel to Ivy, be vacated. All run through the company's plant site and parts of each have been vacated for pulp mill expansion in the past.

## New Valve Incorporates 30-Degree Globe Pattern

Representing a marked advancement in Valve design is the new Grove series "V" and "VL" Valves. Extreme thirty degree valve body design in the globe pattern effects a minimum change in the direction of flow through the valve. Likewise, turbulence is almost entirely eliminated, as the flow stream is carried through the valve in the direction of closing. Expansion takes place directly into the downstream line after the flow has passed through the valve. Thus wire drawing and cutting action is almost entirely removed.

A solid one piece stem and plug is employed to effect absolute tight shutoff when closed. The valve stem is not directly carried by the hand-wheel which removes any chance of the stem becoming distorted or bent. All shocks are absorbed by a multiple full threaded section of the handwheel and yoke. All threaded surfaces and operating parts are protected from paint, dirt and damage by an encasing cap shield.

Essential operating parts of the valves are provided constant "lifetime" lubrication by a special factory sealed process. The sealed lubricant is "zoned" entirely away from the flow stream and isolated from temperature effects to insure lasting permanence.

This new design in 30 degree Globe and 90 degree angle pattern is provided in "Fullstream" quick opening shut-off valves; "Microstream" throttling valves; "Coldstream" shut-off valves; Internal and External Check valves; and Strainers. Complete details covering the many new features of these valves are contained in Bulletin 5060 available on request to Grove Regulator Co., 65th & Hollis Sts., Oakland, California.

## Walter Dreves Joins Taypit As Finance Director

MORRISTOWN, N. J. — Walter J. Dreves has been appointed as director of finance and controller of International Plastic Corporation. This firm is the maker of Filmonize and Taypit Self-Sealing Tapes.

Long well known in financial circles, Mr. Dreves served as finance manager and controller of Marshall Field & Company from 1922 until 1939—at which time he joined Sears Roebuck & Company as factory controller. Since 1943 he has been vice president and controller of Elastic Stop Nut Corporation of America.

## Pacific Mills Promotes Locke

OCEAN FALLS, B. C.—William E. Locke has been appointed assistant resident manager of the Pacific Mills Limited plant. After the completion of his primary education in Victoria, B. C., Mr. Locke entered the University of British Columbia and graduated with a degree in mechanical engineering in 1930. He entered the employment of Pacific Mills in 1934, and in 1940 was promoted to the position of plant engineer. In 1945 he was appointed resident engineer, which position he has held until this later announcement.

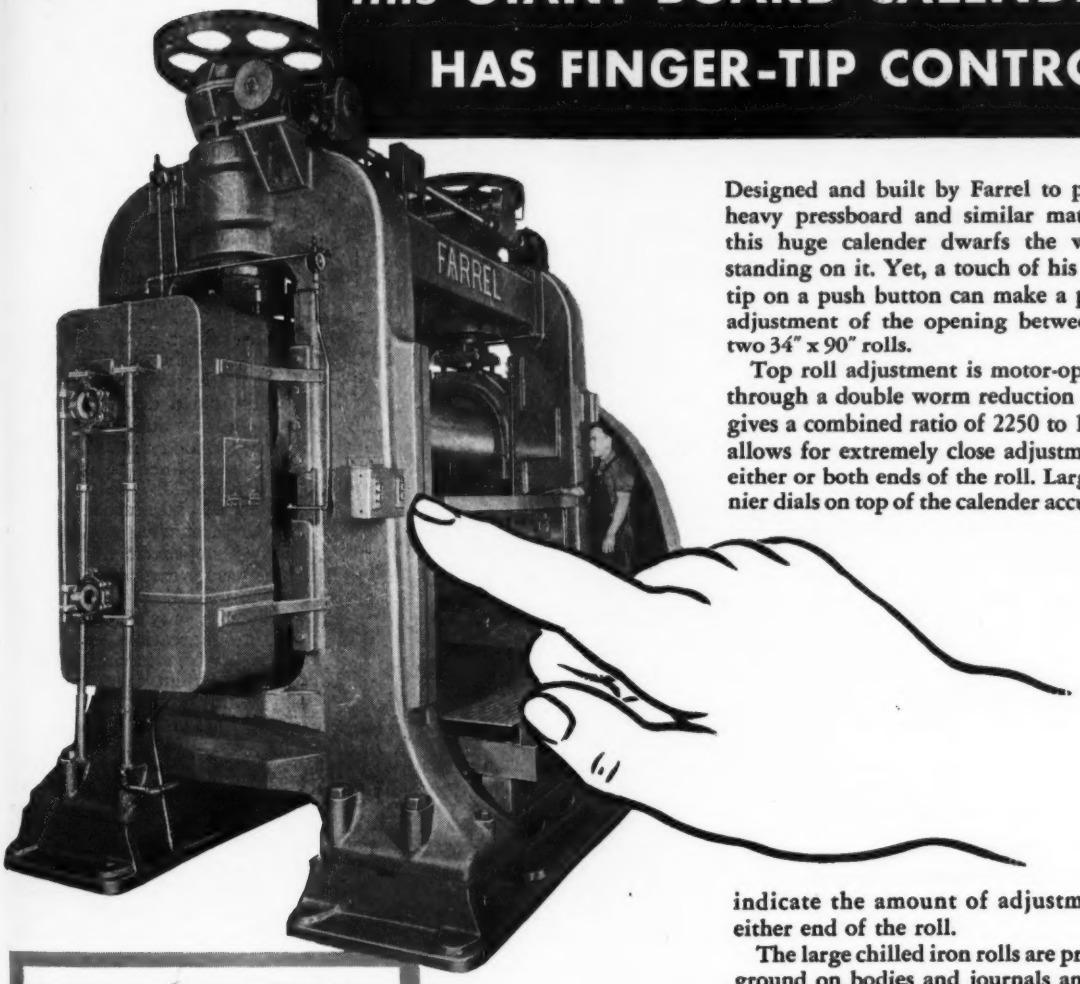
## Eberhart and Parker Promoted

Appointment of Dr. Dale R. Eberhart as research fellow and of Dr. Robert P. Parker as assistant to the research director of the Calco Chemical Division, American Cyanamid Company, was recently announced. Dr. Eberhart received his Ph.D. degree from Ohio State in 1935 and has been associated with Calco since that time. Dr. Parker received his doctorate from Yale in 1933 and has been associated with Calco since that time.

## Niagara Falls Conserves Coal

NIAGARA FALLS, N. Y.—The International Paper Company reports that its stock pile of bituminous coal is sufficient to sustain normal operations for from four to six weeks. The Upson Paperboard Company in Lockport has reduced operations to five days a week to conserve coal.

# *this* GIANT BOARD CALENDER HAS FINGER-TIP CONTROL




Designed and built by Farrel to process heavy pressboard and similar materials, this huge calender dwarfs the worker standing on it. Yet, a touch of his finger tip on a push button can make a precise adjustment of the opening between the two 34" x 90" rolls.

Top roll adjustment is motor-operated through a double worm reduction which gives a combined ratio of 2250 to 1. This allows for extremely close adjustment of either or both ends of the roll. Large vernier dials on top of the calender accurately indicate the amount of adjustment of either end of the roll.

The large chilled iron rolls are precision ground on bodies and journals and both are accurately crowned to compensate for deflection. The rolls are bored and fitted with special stuffing boxes and interior spray pipes for circulation of steam or water.

The calender housings, weighing over twenty tons each, are solid castings of high-strength Meehanite. They are supported on heavy stringer bedplates also made of Meehanite. The drive and connecting gears are continuous tooth herringbone, the famous Farrel *Gear with a Backbone* design.

When you need paper or board calenders, or any of the other paper mill machinery listed at the left, specify Farrel and be sure of getting modern design and careful workmanship backed by a century of experience.

**FARREL PAPER MILL MACHINERY**

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**FOR:** Calender Stacks
Board Calenders
Super Calenders
Glassine Calenders
Friction Rolls
Breaker Rolls
Smoothing Rolls
Coating Rolls
Creping Rolls
Plater Rolls
Cutting Rolls
Paraffining and Waxing Rolls
Saturating Rolls
Silicating Rolls
Miscellaneous Special Purposes
**CALENDERS:** Paper and Board
**GRINDING MACHINES:** Roll
**CALIPERS:** Roll
**GEARS, CUT:** Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
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## Higher Costs Threat To Eagle A Profit

HOLYOKE, Mass.—Unless OPA gives price relief to the grades of paper made by the American Writing Paper Corp., the Eagle A will soon be in the red. That was the warning made by Thomas H. Blodgett, president and chairman of the board of AWP the 6th, in his statement in which he announced first quarter profits of $24,474. This compares to first quarter earnings last year of $50,335.

The local concern, beginning April 22, took on a ten-percent price increase in pulp, that will cost the company about $250,000 a year. Another wage boost is in the works and unless OPA comes through with a price rise, the American Writing can not continue to operate at a profit.

Following is Blodgett's statement concerning the new hazards in operation:—

"In this quarter is included the full effect of the increased labor costs previously estimated at $250,000 annually. This together with other manufacturing cost increases as well as continuing OPA base paper ceiling prices have resulted in the sharp drop in earnings. Effective April 22, an additional cost has been imposed on our operations by way of an added 10% increased pulp cost, which will aggregate approximately $250,000 per year.

"Labor contract negotiations are again in progress.

"Unfavorable operating results will ensue, unless and until price relief on our paper production is afforded us by OPA."

### Southern Kraft Opens in Marion

MARION, S. C.—With H. H. Flickinger as manager, the Southern Kraft division of the International Paper Company is establishing an office in Marion for the purpose of buying pine and hardwood pulpwood. Joseph Carrie will be office manager.

### Silver Rise May Cut Mills More for Power

HOLYOKE, Mass., May 9—The proposed rise in silver from 70 cents to 90.5 cents a fine silver ounce would swell the income of the Holyoke Water Power Co. from paper manufacturing plants here. The American Writing Paper Corp. and the Valley Paper Co. pay the water power company for their mill powers in dollars based on the value of silver at the time of payment.

This has been done since the American Writing won its famous silver bullion case before the United States Supreme Court back in 1936. At that time silver was worth 40 cents a fine ounce. Since then it has steadily climbed to 70 cents. Congress is now considering a rise to 90.5 cents an ounce.

This is still a far distance from the $1.29 an ounce price that prevailed when the mill powers were granted back in the last century.

### Coosa River Seeks Increase In Capital to $1,500,000

TALLADEGA, Ala. — Coosa River Newsprint Company is planning to increase its capital stock from $2,000 to $1,500,000, it is learned. Stockholders of the corporation are scheduled to meet in Birmingham, June 4.

As previously reported in PAPER TRADE JOURNAL, the Coosa River Newsprint Company made known at the time of its formation that it planned to build a $10,000,000 newsprint plant on a portion of the reservation of the Alabama Ordnance Works at Childersburg, Ala.

## Dryden Proposes To Issue 3 Million

MONTREAL — A special meeting of shareholders of the Dryden Paper Company is to be held here on May 30 to ratify a by-law authorizing the issue up to $3,000,000 of new four percent bonds. Of these it is proposed to issue at once an amount of $1,500,000 to pay off bank loans and redeem the balance of six percent 20-year bonds now outstanding. The new bonds will be payable in Canadian funds only, whereas the present bonds are payable in Canadian or U. S. funds. The refunding will effect a considerable saving in annual interest charges.

The balance sheet as at September 30, 1945 (close of the last fiscal year) showed bank loans amounting to $577,000 and funded debt of $835,000 first mortgage 6's due February 1, 1949. It is understood that the amount of the bonds has since been reduced to less than $800,000. The bonds are redeemable at 101 and accrued interest, payable in U. S. funds.

The capital improvement program of the past two years has involved expenditures of from $500,000 to $600,000. The company's new mill, recently put into operation, is showing good results, and is having a beneficial result on current earnings.

### Shipping Resumes at Buffalo

BUFFALO, N. Y.—The first ship to dock at the Great Lakes Terminal on the Buffalo River since July 1942 was tied up at the huge warehouse unloading newsprint. The ship was the Birchton, owned by the Gulf & Lake Navigation Company of Montreal, which brought between 700 and 800 tons of newsprint here from Cornerbrook, N. F.

## FINANCIAL RECORD OF THE WEEK

### New York Stock Exchange

High, Low and Last for Week Ending May 11, 1946

STOCKS

| | High | Low | Last |
|---|---|---|---|
| A. P. W. | 9⅛ | 8⅝ | 9⅛ |
| Armstrong Cork Co. | 61⅝ | 60 | 61½ |
| Celotex Corp. | 30⅜ | 27⅛ | 29½ |
| Celotex Corp., pf. | 21⅜ | 21 | 21 |
| Certain-Teed Products Corp. | 25¼ | 21⅝ | 25 |
| Certain-Teed Products Corp., pf. | .... | .... | .... |
| Champion Paper & Fibre Co. | 63 | 57½ | 63 |
| Champion Paper & Fibre Co., pf. | 112 | 111⅛ | 112 |
| Congoleum Nairn Co. | 37⅜ | 35¼ | 37⅜ |
| Container Corp. of America | 51¼ | 48½ | 51 |
| Continental-Diamond Fibre Co. | 15½ | 14¾ | 15 |
| Crown-Zellerbach Co. | 37⅝ | 35 | 37¼ |
| Crown-Zellerbach Co., pf. | 108 | 107⅛ | 107⅞ |
| Dixie Cup Co. | 50¾ | 49 | 49 |
| Dixie Cup Co.-A | 59¼ | 58 | 59 |
| Flintkote Co. | 46 | 42¾ | 45½ |
| Flintkote Co., pf. | 113¾ | 113 | 113¾ |
| Robert Gair | 10 | 9½ | 9⅞ |
| Robert Gair, pf. | 20⅝ | 20⅜ | 20⅝ |
| International Paper Co. | 52⅛ | 48½ | 51¾ |
| International Paper Co., pf. | 129½ | 121¼ | 128½ |
| Johns-Manville Corp. | 157 | 152½ | 157 |
| Johns-Manville Corp., pf. | 140 | 140 | 140 |
| Kimberly-Clark Corp. | 65 | 64 | 65 |
| Mac Andrews & Forbes | 42½ | 41 | 42⅛ |
| Mac Andrews & Forbes, pf. | .... | .... | .... |
| Masonite Corp. | 71 | 68 | 69 |
| Mead Corp. | 29¼ | 26¼ | 29¼ |
| Mead Corp., pf. A-6% | 108½ | 108 | 108 |
| Mead Corp., pf. B-5½% | 107¾ | 107⅛ | 107⅜ |
| National Container Corp. | 35⅜ | 33 | 35¼ |
| Paraffine Companies, Inc. | 84 | 83½ | 83½ |
| Paraffine Companies, Inc., pf. | .... | .... | .... |
| Rayonier, Inc. | 30 | 27¼ | 29⅛ |
| Rayonier, Inc., pf. | 38 | 37½ | 38 |
| Ruberoid Co. | 61 | 58 | 60¼ |
| Scott Paper Co. | 57 | 55 | 56½ |
| Scott Paper Co., pf. | .... | .... | .... |
| Sutherland Paper Co. | 52 | 51¾ | 52 |
| Union Bag & Paper Corp. | 35 | 32¾ | 35 |
| United Paperboard Co. | 14⅜ | 12¾ | 14⅜ |
| U. S. Gypsum Co. | 129 | 123½ | 129 |
| U. S. Gypsum Co., pf. | .... | .... | .... |
| West Virginia Pulp & Paper Co. | 48½ | 47 | 48½ |
| West Virginia Pulp & Paper Co., pf. | 115 | 114 | 115 |

BONDS

| | | | |
|---|---|---|---|
| Abitibi Pulp & Paper Co. 5s '53 | 109¾ | 109⅛ | 109⅛ |
| Celotex Corp. 3¾s '55 | .... | .... | .... |
| Certain-Teed Products Corp. 5½s '53 | .... | .... | .... |
| Champion Paper & Fibre Co. 3s '65 | .... | .... | .... |
| International Paper Co. 5s '47 | 102⅛ | 102⅛ | 102⅛ |
| Mead Corp. 3½s '53 | .... | .... | .... |

### New York Curb Exchange

High, Low and Last for Week Ending May 11, 1946

STOCKS

| | High | Low | Last |
|---|---|---|---|
| Great Northern Paper Co. | 42½ | 41¼ | 42½ |
| Rummel-Rose Fibre Corp. | 19¾ | 18½ | 19¼ |
| St. Regis Paper Co. | 13⅛ | 10½ | 13 |
| St. Regis Paper Co., pf. | .... | .... | .... |
| Taggart Corp. | 10 | 9 | 10 |

BONDS

| | | | |
|---|---|---|---|
| American Writing Paper Co. 6s '61 | 103 | 102⅞ | 102⅞ |

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# Rayco is "Cooker Ready"

WHEN preparing a meal, we all know, frozen foods require no preliminary handling and greatly reduce cooking time. The same is true in making fine cotton content paper from RAYCO Linter Cotton. Being free of impurities, synthetics and dyes and having no knots nor weaving to beat out, rag room operations are completely eliminated. RAYCO is not only delivered "cooker ready" but actually requires *less* cooking than other base materials.

At the present time, due to the widespread shortage of all cotton fibers, only a limited amount of RAYCO Linter Cotton is available. Through our wide market contacts and intensive laboratory research, we are making every effort to maintain service to our regular customers, but we regret that we cannot accommodate new customers right now.

However, after August, when the new crop comes in, we hope to have more linters available. In the meantime, we invite you to consult with our engineering staff and let them explain how RAYCO Linter Cotton can easily be adapted to your particular setup and equipment to produce high quality cotton content.

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# RAYCO LINTER COTTON

## Institute Presents A Strong Program

APPLETON, Wis.—Among the principal speakers at the tenth annual executives conference of the Institute of Paper Chemistry here May 16 and 17 will be Major General William J. (Wild Bill) Donovan, formerly director of the Office of Strategic Services and assistant chief of the United States War Crimes Commission. He will speak after a dinner Thursday evening, May 16, at North Shore Country Club. Ernst Mahler, executive vice president of Kimberly-Clark Corporation, Neenah, Wis., will preside.

Dr. Westbrook Steele, Institute director, will present his annual report at a luncheon at North Shore at noon, May 16. This will be followed by a symposium on "Trends," with D. K. Brown, Neenah, presiding. John G. Strange, Institute secretary, will be the discussion leader.

Other scheduled speakers are Dr. Harry F. Lewis, "The Educational Dilemma"; Dr. Clarence J. West, "What Is Happening to Scientific Literature?" Dr. Geoffrey Beall, "The Better Use of Information"; Dr. T. A. Howells, "Relations Between Plastics and Paper," and Dr. Emil Heuser, "Trends in Synthetic Fibers and Film." A golf tournament is to be held at 3:30 in the afternoon.

Brigadier General Georges F. Doriot, head of the military planning division, Quartermaster corps, will be the speaker at a luncheon at 12:30 Friday Noon, May 17, at North Shore.

The morning meeting at the Institute of Paper Chemistry will open at 10 o'clock with D. C. Everest presiding. Mr. Strange will be the discussion leader. Speakers will be Dr. Loren V. Forman, "The Physical Plant;" Dr. J. A. Van den Akker, "Automatic Control;" Dr. B. W. Rowland, "Chemical Innovations;" Dr. Irwin A. Pearl, "Utilizing the Useless;" R. C. McKee, "A Proving Ground for Products;" and Dr. Otto Kress, "Industry Trends." Dr. Louis E. Wise will talk on "The Changing Raw Materials Picture."

A buffet dinner will be held at North Shore at 6:30 Friday evening, May 17. The institute staff will be available Saturday, May 18, for discussion of specific problems.

Officers of the institute are Ernst Mahler, president; D. C. Everest, vice president; H. P. Carruth, vice president; Westbrook Steele, executive director; John G. Strange, secretary; Cahail, assistant secretary. Dr. Nathan M. Pusey, president of Lawrence college, is an ex officio member of the board.

Trustees for terms expiring this year are: Mr. Everest, Marathon Corporation; David L. Luke, Jr., West Virginia Pulp and Paper company; John L. Riegel, Riegel Paper corporation; and Norman W. Wilson, of the Hammermill Paper company.

Trustees for terms expiring in 1947 are: Dan K. Brown, Neenah Paper company; George E. Dyke, Robert Gair company; Stuart E. Kay, International Paper company; J. D. Zellerbach, Crown Zellerbach corporation.

Trustees for terms expiring in 1948 are: Henry P. Carruth, Union Bag and Paper corporation; Sydney Ferguson, The Mead corporation; Ernst Mahler, Kimberly-Clark corporation; and W. Irving Osborne, Jr., Cornell Wood Products company.

## Kimberly-Clark Raises Scale To Balance Shorter Week

KIMBERLY, Wis. — Kimberly-Clark Corporation, Neenah, Wis., has granted a general increase of 18 cents per hour at its Kimberly and Niagara, Wis., mills, but 10 cents of the increase is contingent on a return to a shorter work week, it was declared last week by Ray Haase, president of the Kimberly Mill Workers Union. Eight cents of the increase is in effect, and the remaining ten cents is to be paid when the work week is cut back to 36 and 40 hours from the present 48 hours.

Unions involved were the Kimberly group; the Papermill Workers Union of Niagara and the Confederated Unions of America, all independents. Union membership and the National Wage Stabilization Board still must approve the agreement, which also contains revisions of other clauses in previous agreements.

## OPA Sets $96 Ton Ceiling on Solid Woodpulp Paperboard

WASHINGTON, D. C. — Producers' ceiling prices for solid woodpulp paperboard have been increased an average of $11 a ton, or approximately 12 per cent by the Office of Price Administration. The increase, effective May 14, 1946, is to be absorbed by purchasers of this paperboard, principally food and drug manufacturers.

OPA said that the three companies producing this paperboard have been showing a loss on this products under their October 1-15, 1941, "freeze" ceilings, due to higher costs for labor and materials. As a result, production had been progressively curtailed.

The new ceiling price is $96 a ton, f.o.b. mill, for all producers, with freight allowed up to $10 a ton.

## Haggist Joins U. S. Cordage

On May first, after thirty-six years of continuous service with American Manufacturing Co., Gustave H. Haggist resigned to become sales manager with U. S. Cordage Co. Gus started as office boy with American back in 1909 and filled various mill office jobs such as employment, personnel, and workmen's compensation manager. He spent a year in the Calcutta, India, branch, and since 1928 has been a member of the New York City sales force. He is well known to the twine jobbers of New York city and vicinity.

## Union Bag & Paper Executives Meet

HUDSON FALLS, N. Y.—The Hudson Falls management of the Union Bag and Paper Corporation was host recently to representatives of the accounting, bag, pulp and paper, production development and sales divisions of the corporation in a joint management committee meeting conducted at the local plant. G. W. E. Nicholson, vice president in charge of manufacturing; L. J. Doyle, general sales manager, and H. W. Paddock, comptroller, all of New York, presided at the various meetings.

P. Fay Marrs, resident manager of the Hudson Falls plant, explained that it has been customary in the past for the committee to meet in New York but that new plans call for four such meetings a year to be conducted at the plants, two of which will take place at Hudson Falls. The entire group of about 30 made a two-hour tour of the Lake George region, later convening for dinner and a social evening.

The following members of management represented their respective divisions at the meeting: From the New York office, E. E. Brown, Mr. Doyle, F. E. Meendsen, Mr. Nicholson, Mr. Paddock, J. B. Porter, C. L. Reynolds and A. W. West; from Savannah, Ga.: T. T. Dunn, J. T. Harrison, C. E. Hartford and L. Sopp.

From Hudson Falls: True M. Avery, H. T. Driscoll, R. F. Fresh, J. D. Griffin, A. P. Jones, Mr. Marrs, C. J. McIntire, A. J. Nickerson, L. T. Ross, S. C. Sullivan, L. B. Taylor, J. P. Van Dusen, D. B. Wheeler, H. J. Winegard and C. G. Wright.

## Ed Corey Now Sells for Brown-Bridge Mills

TROY, Ohio — The Brown-Bridge Mills, Inc., manufacturer of gummed tapes and gummed papers, has added C. Corey to the sales force. Ed Corey is well known in the trade, having represented Tanglefoot in the middle west for 14 years. Ed made quite a record for himself as a builder of sales for his company and for the merchants who distributed his products, and in his new connection he will have a wider opportunity to make use of his exceptional sales promotion ability.

Ed, who is married and has two children, will continue to make his home in Grand Rapids. He will cover Michigan and adjacent territory on the complete Brown-Bridge line.

## McLaren on Pacific Mills Board

VANCOUVER, B. C.—W. D. McLaren, Managing Director of West Coast Shipbuilders Ltd., has been elected a member of the Board of Directors of Pacific Mills Limited. Mr. McLaren will occupy the director's seat left vacant by the passing of the late C. A. Cotterell.

# THE BROUGHTON S–10–XM OSCILLATING SHOWER WILL SAVE WATER ON YOUR CYLINDER MOLDS THICKENERS WIRES and VATS

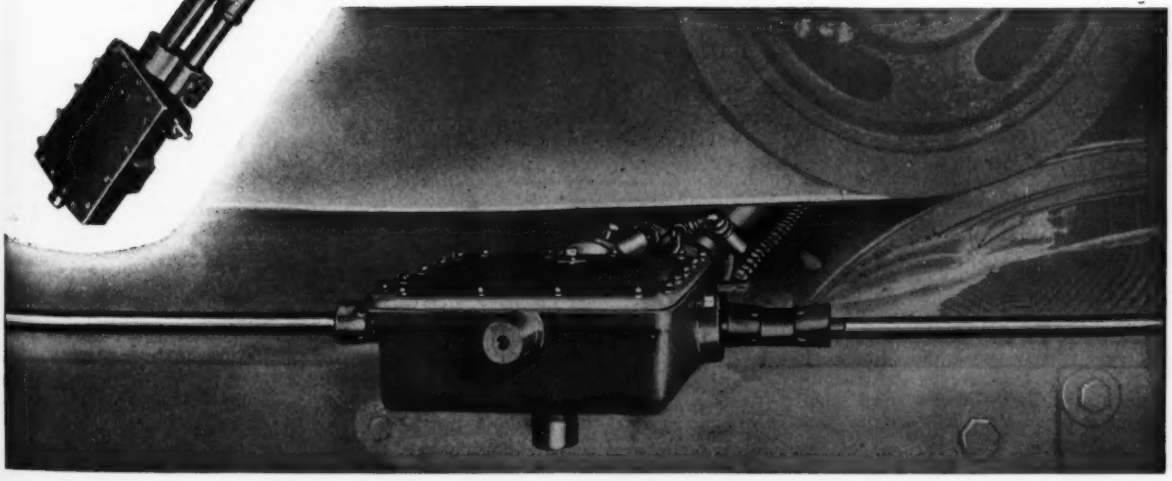
This mechanically operated oscillating shower requires less than 6 gallons per minute of fresh filtered water to do a thorough job of continuous cleaning of wire face. Water savings in many mills exceed 100,000 gallons during every 24 hours.

It can be installed on any cylinder mold and beneath the felt. It can be equipped with non-oscillating, adjustable deckle edge jets. This same shower can be applied in any position where a shower is necessary and will clean felts and Fourdrinier wires.

***We are also the manufacturers of S-13-XM Showers for cleaning head box cylindrical screens.***

***Information and Drawings upon request.***

***Pat. November 3, 1942—2300909 (Other Patents Applied For)***



# A. E. BROUGHTON & COMPANY

Manufacturers of mechanically operated Oscillating Showers, and Unit Vacuum Controls for paper machine suction boxes.

**GLENS FALLS, N. Y.**

## Pacific Mills Plans To Spend 2 Million

OCEAN FALLS, B. C.—Expenditure of approximately $2,000,000 will be undertaken by Pacific Mills, Ltd., in connection with a power development in the vicinity of their big plant at Ocean Falls. The new plant will deliver about 10,000 kilowatts to the pulp and paper mills when developed. Paul E. Cooper, president of the company, declares that the firm plans to harness the Nascall River where it flows into Dean Channel, about thirty miles above Ocean Falls. The new hydro-electric system will provide additional power for expanding work and new mechanization work at the power town.

Engineers from H. G. Acres & Co., Niagara Falls, are already on the Nascall River site. The party is headed by J. H. Ings, who is directing the preliminary surveys for the power site and transmission line. K. G. Fellowes is in charge of the surveys.

It is estimated that the Nascall River power development will produce approximately 15,000 horsepower, which will supplement the present hydro-electric power supply at the big paper plant.

## OBITUARY

### Fred N. Stevens

HOOSICK FALLS, N. Y.—Fred N. Stevens was buried here in the Stevens family plot following his death in his eightieth year at Bennington, Vt. He was president of the Stevens & Thompson Paper Company for more than twenty years, having grown up in the company since he joined it in 1888, under the parental guidance of S. S. Stevens at that time its president. He made the company a leading factor in the wallpaper field, retiring about ten years ago from active direction but retaining a directorship.

### Fred W. Mead

PITTSFIELD, Mass.—Fred W. Mead, 72, dean of book binders and paper rulers in this section and for 58 years employed by the Eagle Printing & Binding company, died Saturday night at the House of Mercy hospital where he had been a patient for seven days.

### Adella May West

HOLYOKE, Mass.—Mrs. Adella May (Ferry) West, wife of Raymond J. West, general manager of the Stevens Paper Co. of South Hadley Falls, died at her home in Westfield on May 5th after a short illness.

### James W. Sheehan

HOLYOKE, Mass.—James W. Sheehan, veteran employe of the American Writing Paper corporation and for a number of years financial secretary of the Eagle Lodge of Papermakers, died in the United States Veterans hospital, Bronx, N. Y., recently.

## One-Man Operated Cranes Described by Orton

One-Man Aero Cranes, of the Orton Crane & Shovel Co., Chicago, are described fully and with exactness in an attractive 16-page catalog now being issued. These Orton models, pneumatic tired and engineered for plant-yard uses, are unusual in the crane field in that they feature one man operation, travel from job to job under their own power with no more difficulty than handling a standard truck, and are claimed to be nimble and quick-operating on any job which requires much back and forth travel of the unit.

Two separate tables give general dimensions of all seven models and the normal working capacities of these models at an operating radius of nine to fifty feet. A third table lists the weights of rehandling and excavating clamshell buckets loaded with various kinds of loose materials.

## Mead Corporation Takes Over Columbian Paper Company

The Exchange Offer made by the Mead Corporation to the stockholders of Columbian Paper Company, Buena Vista, Virginia, was declared effective this week. Operation of the mill will continue without interruption as a division of the Mead Corporation. The Columbian Paper Company for the present will retain its name and corporate entity. The Board of Directors will be composed of three members identified with the former management and six members from the Mead Corporation, namely: J. Frank Key, M. D. McKee and C. D. Niswander, Buena Vista, Virginia; Sydney Ferguson, C. Lee Ordeman, R. I. Worrell and C. R. Vance, New York City; H. T. Mead, Dayton, Ohio; C. R. Van de Carr, Jr., Chillicothe, Ohio.

J. Frank Key was elected president of the company and will hold that office in addition to his duties as general manager, M. D. McKee will continue in the office of secretary and treasurer.

## OPA Raises Ceiling on Bleached Sulphite Waxing

WASHINGTON, D. C.—Manufacturers' ceiling prices for bleached sulphite waxing paper have been increased approximately 10 percent by the Office of Price Administration. This increase, effective May 14, 1946, amounts to $15 a ton for most producers, and will be absorbed by waxed paper manufacturers, whose prices are not changed by today's action.

The new ceiling is $8 a hundredweight, or $160 a ton, f.o.b. mill, with seller paying freight at the carload rate. At the same time, differentials for other than the standard weight of waxing paper are established in dollar-and-cent terms at the previously "frozen" levels.

## Labor and Management Seek New Contract in Holyoke

HOLYOKE, Mass. — A paper manufacturers' committee and labor union representatives met with Labor Relations Adviser Harold T. Martin this week and are understood to have reached a tentative agreement on a 9-cent hourly wage increase. This would bring the direct rate raises since V-J day up to 15 cents, the amount recognized as a pattern for the industry in this region under the government wage stabilization program.

The reported agreement is, of course, subject to approval or disapproval by the whole group of manufacturers and of the union membership, the negotiating committees having no power to reach final settlements.

Edward M. Moore, local agent of the International Brotherhood of Papermakers, predicted that agreement would be reached although he refused to confirm or deny the 9-cent figure, as being the basis for settlement.

He said that he was sure there would be no strike in the paper industry when the contract expires June 1.

The union had rejected an earlier offer by the companies to settle for seven cents, reiterated their demand for 12½ cents and rejected an offer for four paid holidays instead of the six requested by the workers.

## Stoppage Ended at B-F-D, Work is Resumed on Plant

OGDENSBURG, N. Y. — Employes of Alpert Construction, engaged in preparing the B-F-D plant here for operation, have gone back on the job after absence from work since March 20.

Prolonged slowing down of renovation activities at the mill had resulted Saturday in the laying off of 20 maintenance employes of B-F-D affiliated with the International Brotherhood of Pulp, Sulphite and Paper Mill Workers.

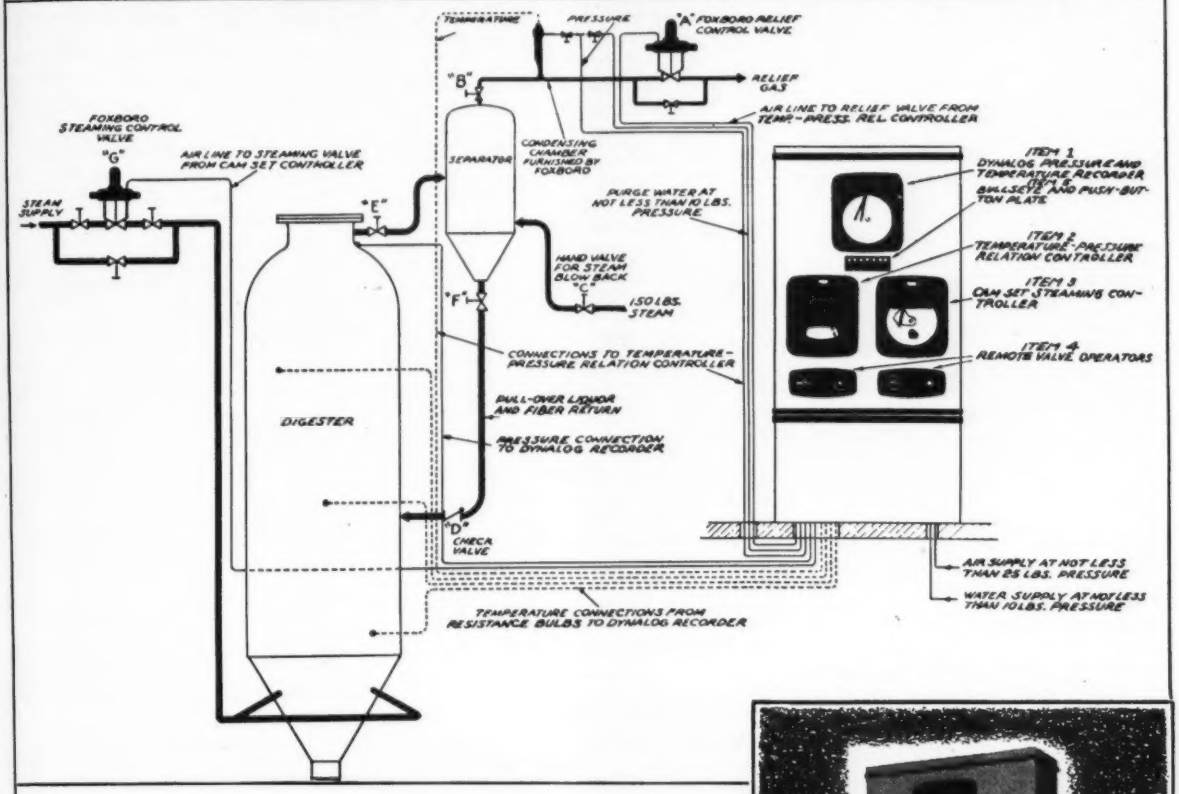
A national labor relations board election is slated for Friday among laborers of the construction company to decide if local 40 of the hod carriers union in Watertown shall be named official bargaining agent for the group.

## Envelope Enclosures Show Waxed Paper Advantages

A novel series of envelope enclosures printed on waxed paper is being used by the Waxed Paper Institute, Chicago, as part of that association's promotional and publicity campaign. Printed in pastel colors on white opaque waxed paper stock, these stuffers remind customers, prospects, salesmen, and consumers of the important qualities of waxed paper. Featured waxed paper advantages include "Self-sealing", "Weather-proof", "Low-cost", "Printable", "Flexible", "Sanitary".

# EXTRA PULP PROFITS

## from a Compact, Engineered "Package"!

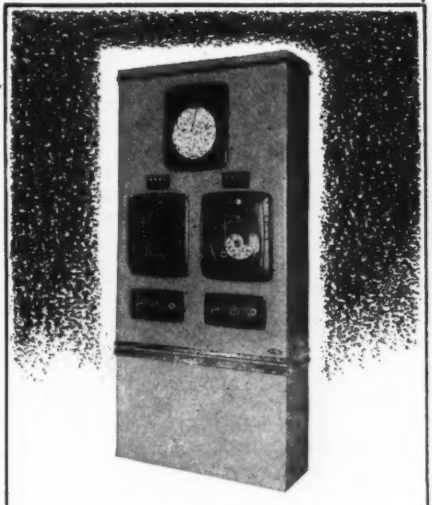

TEMPERATURE
PRESSURE
"A" FOXBORO RELIEF CONTROL VALVE
"B"
RELIEF GAS
AIR LINE TO RELIEF VALVE FROM TEMP.-PRESS. REL. CONTROLLER
FOXBORO STEAMING CONTROL VALVE
"G"
AIR LINE TO STEAMING VALVE FROM CAM SET CONTROLLER
STEAM SUPPLY
"E"
SEPARATOR
CONDENSING CHAMBER FURNISHED BY FOXBORO
PURGE WATER AT NOT LESS THAN 10 LBS. PRESSURE
HAND VALVE FOR STEAM BLOW BACK
"C"
"F"
150 LBS. STEAM
CONNECTIONS TO TEMPERATURE-PRESSURE RELATION CONTROLLER
DIGESTER
PULL-OVER LIQUOR AND FIBER RETURN
PRESSURE CONNECTION TO DYNALOG RECORDER
"D"
CHECK VALVE
ITEM 1 DYNALOG PRESSURE AND TEMPERATURE RECORDER
ITEM 5 BULLSEYE AND PUSH-BUTTON PLATE
ITEM 2 TEMPERATURE-PRESSURE RELATION CONTROLLER
ITEM 3 CAM SET STEAMING CONTROLLER
ITEM 4 REMOTE VALVE OPERATORS
AIR SUPPLY AT NOT LESS THAN 25 LBS. PRESSURE
WATER SUPPLY AT NOT LESS THAN 10 LBS. PRESSURE
TEMPERATURE CONNECTIONS FROM RESISTANCE BULBS TO DYNALOG RECORDER

### *A Foxboro Automatic Digester Control System offers higher fiber yield, lower alkali consumption*

Consider what you'd stand to gain if your yield-per-digester could be stepped up 1% . . . or even $\frac{1}{10}$ of 1%. That will give you a rough idea of the extra pulp profits many mills are now getting from installations of Foxboro Automatic Digester Control Systems!

These efficiency-boosting control systems are designed as complete units, readily adaptable to any type of alkaline digester installation. Automatically, they maintain such close control of cooking time, temperature and relief that wasteful operating variations are held to new minimums. Steam, chemical and labor requirements are reduced . . . both pulp quality and uniformity are substantially improved.

Write for complete information on these new Foxboro "packaged profit-builders" for alkaline pulp digesters. Also details of similar Foxboro Control for sulphite processes. **The Foxboro Company, 114 Neponset Avenue, Foxboro, Mass., U. S. A.** Branches in principal cities.



Foxboro Automatic Digester Control Unit with controlled rate of temperature rise. Dynalog Temperature Recorder at top. Beneath are Foxboro Digester Relief Controller and Foxboro Cooking Schedule Controller with cam-set control point.

FOXBORO
REG. U. S. PAT. OFF.

Automatic
DIGESTER CONTROL

# Aluminum Foil Now Available To Standardize Mullen Tester

Some years ago the Canadian Pulp and Paper Association carried out some extensive research on the possibility of using aluminum foil as a basis of standardizing the gage of the Mullen tester. After trying various methods of approach, they developed a formula by means of which the bursting strength of a strip of foil could be accurately determined from the weight of the strip. This result is based on the fact that, unlike paper, aluminum foil which has been rolled from one batch of metal is uniform in strength of bonding and varies only with the thickness of the foil. But thickness tests are made on small spots and cannot give a really average value for the entire strip. Therefore, weight, which does represent the entire average thickness and is also convenient to use was chosen for the basis of operation. The formula which connects weight with bursting value must be calculated anew for each batch of foil.

Aluminum foil can be purchased which is fully twice as accurate as the best checking paper which can be made; also it is not affected by changes in atmospheric moisture, or by a reasonable, unavoidable crushing of the surface of the thinner foil, and it does not deteriorate with time. A supply of thin foils, each with the bursting strength value marked on it, may be kept in files ready for use at any time.

In 1940 the Minor Laboratory of Springfield, Massachusetts, obtained and standardized two lots of this foil to values which were based on those of the master instrument in the hands of the manufacturer of the Mullen tester. This work was carried further than that of the Canadians in that the foil, instead of being sold in rolls, was cut into strips which had been weighed and marked with the correct bursting strength value for the strip. In this way there was available to jobbers, salesmen and other non-technical men, as well as to the trained men of the larger laboratories, an accurate, convenient, and quick method of checking a Mullen tester for gage accuracy.

The strips were cut at approximately eighteen inches—the length for the two thicknesses varying for formula simplicity—since this length allowed eight punches which is a convenient number for an accurate average value. In cutting the strips, after each ten, one was laid aside, weighed and tested. For the thin foils averaging around 15 points, in every case the average punched differed from the calculated value by less than one point and 90 percent of these values were within 0.5 points of calculation. For the heavier foils testing around 40 points, 90 percent differed from the calculated by less than one percent and none were 2 points divergent.

During the war it was not possible to replace a grade of foil as it became exhausted and also, the Minor Laboratory became a part of the Hurlbut Paper Company. But foil is now available and, since the Hurlbut Paper Company desires to have this foil available for its own use, new foil has been obtained testing around 15 points and around 40 points and this has been standardized and checked with the same care as previously and the formula has been adjusted to results. Since many requests have been coming in from former purchasers and others for this foil, at the suggestion of the laboratory, the Hurlbut Paper Company procured a sufficiently large lot of this foil to enable them to supply these standard strips for general use. The Hurlbut Paper Company is glad to give this service to the paper industry and will supply standardized strips at the original price of $1.00 for two strips, $10.00 for 25 strips or $15.00 for 50 strips. Orders will be filled upon requests sent to the Hurlbut Paper Company.

## Scott Bowlers Share Seventy Trophies

PHILADELPHIA—More than seventy prizes were awarded to Scott Paper Company bowlers for records and scores during the recently-ended 30-week bowling league schedule. The bowling league held its annual banquet at the Columbus Center last Thursday night.

New officers recently elected by the bowling group include: James Springer, president; George Ellis, vice-president; George Paulding, treasurer; Jos. Vaul and Herb Craig, secretaries, and Bill Remorenko, Hayes Pennington, Arbuary Gardner and Cliff Fuhrman, directors.

Retiring officers are James Conaway, president; Stan Bonsall, vice-president; Willis Warfel, treasurer; Charles Wiley and Howard Baker, secretaries; and Jack Cooper, George Ellis and Leslie Jackson, directors.

## George Tayloe Elected to Succeed His Father

MEMPHIS—At a recent meeting of the board of directors of the Tayloe Paper Company, following the death of George G. Tayloe, the following officers were elected: Howard Tayloe, president and treasurer; Dudley Forsmark, executive vice-president; E. E. Hopkins, vice-president and secretary.

## New Organization Takes Claremont Paper Mill

The Claremont Paper Corporation has acquired the paper mill formerly operated by the Claremont Paper Co., Claremont, N. H. William A. Kirn, Sr. will continue as president of the new corporation. The other officers are: R. B. Gerard, New York City, treasurer; James H. Molloy, Philadelphia, vice-president; John D. Wilson, New York City, vice-president. The board of directors consists of: William A. Kirn, Sr., Claremont, N. H.; Dudley W. Orr, Concord, N. H.; John D. Wilson, New York, N. Y.; R. B. Gerard, New York, N. Y.; J. H. Molloy, Philadelphia, Pa.

## Admen View Film On Paper Making

PHOENIX, Ariz.—A sound and color film titled "River of Paper" was shown members of the Phoenix Advertising Club at their regular meeting in Hotel Westward Ho last week. The film presented by the Powell River Paper Company of British Columbia, depicts the manufacture of pulp and various grades of paper from timber of the north woods. Manufacture of newsprint is shown from the cutting of the tree to milling into newsprint.

Introducing the show was Ray Jarvis of the Zellerbach Paper Company, who gave a brief talk on the paper marketing situation.

## Donald Peller Joins Lawson

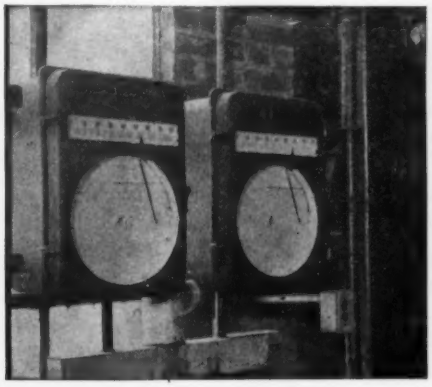
Donald Peller, recently released from the Army after three years of active duty, has joined E. P. Lawson Company, Inc., manufacturers of paper cutters and bindery equipment, 426 West 33rd Street, New York City, as a sales representative. Mr. Peller, who spent a year and a half overseas in the Pacific Theatre, was a Technician with the 275-1st Engineer Heavy Shop Company. He is a graduate of Tilden and studied Engineering at Brooklyn Tech. Mr. Peller will represent Lawson in the New York area and on the East Coast.

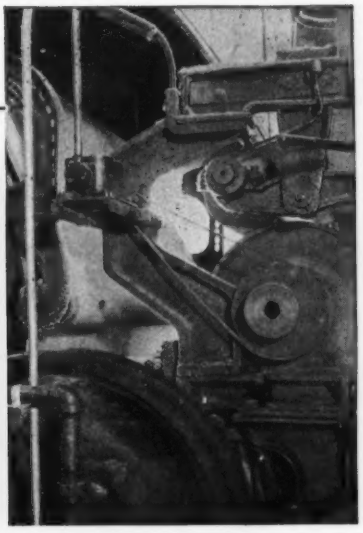
## Production Ratio Rises to 107.3

The ratio of United States paper production to mill capacity for the week ending May 4, 1946 as reported by the American Paper and Pulp Association, was 107.3 percent compared with 100.6 percent for the preceding week and 90.7 percent for the corresponding week a year ago. Paperboard production was 101 percent for the current week compared with 95 percent for the preceding week, and 97 percent for the corresponding week a year ago.

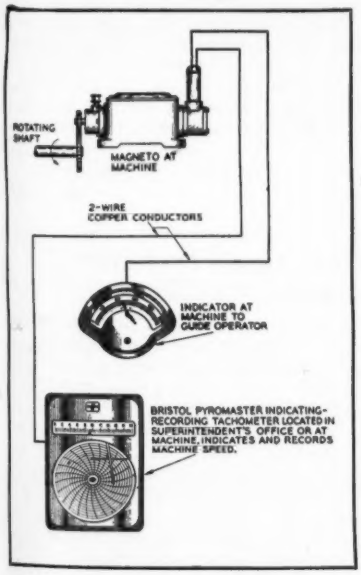
# How Bristol's Pyromaster Tachometers Report Changes in Paper Travel Speed

## *Instantly and Accurately...Electrically*





Two Bristol Pyrometer Tachometers keeping tabs on machine speeds in a Massachusetts mill. Notice how the magneto is V-belt-connected to one of the rolls.


ROTATING SHAFT
MAGNETO AT MACHINE
2-WIRE COPPER CONDUCTORS
INDICATOR AT MACHINE TO GUIDE OPERATOR
BRISTOL PYROMASTER INDICATING-RECORDING TACHOMETER LOCATED IN SUPERINTENDENT'S OFFICE OR AT MACHINE, INDICATES AND RECORDS MACHINE SPEED.

Some paper mills install an indicating tachometer at the machine to guide operator and a recorder in superintendent's office for permanent records. Other mills rely on one Indicating-Recording Pyromaster Tachometer mounted close to the machine.

Bristol's Indicating-Recording Pyromaster Tachometer responds instantly to changes in machine speed as reported by the heavy-duty Model 44 Magneto which generates voltage directly proportional to the speed. The sensitive recording mechanism — unaffected by vibration — moves only when the galvanometer responds to a speed change. That reduces wear of moving parts to the minimum.

With no mechanical connection between galvanometer and the other units, the galvanometer, potentiometer unit and potentiometer relays are housed in separate gasketed cases for protection against dust and air currents when the instrument door is open.

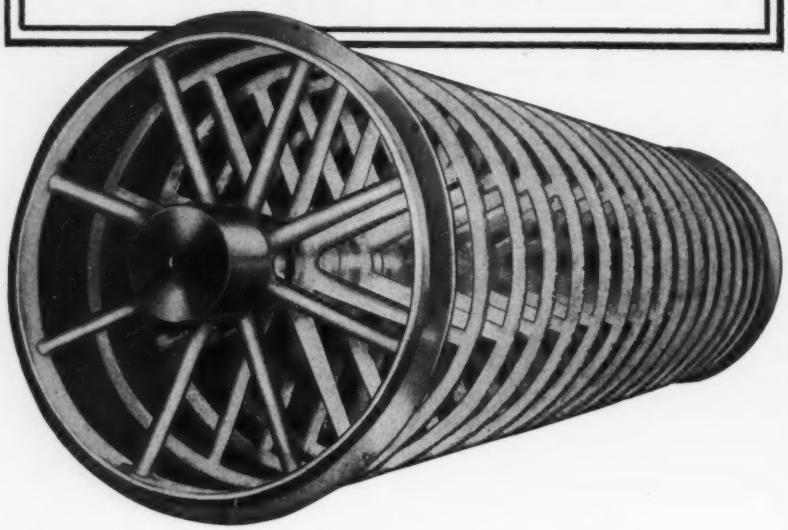
All parts are accessible with the instrument in full operation. Dial and recording mechanism are mounted on the front of a hinged panel, with slide wire and potentiometer mechanism on the back. Each part can be serviced without disturbing any other part. No lubrication is ever required.

Other features of Bristol's Pyromaster Tachometer are fully described in Bulletin S1400. Address THE BRISTOL COMPANY, 148 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ont. Bristol's Instrument Co., Ltd., London, N.W. 10, England). West Coast: *Branch Factory*—40 Berry St., San Francisco 7, Calif. *Branch Office* — White Building, Seattle 1, Washington. Lake Region: *Branch Factory & Office*—351 East Ohio St., Chicago 11, Ill. Southern States: *Branch Office*—Comer Building, Birmingham 3, Alabama.

*Engineers process control for better products and profits*

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

# HOW TO GET *FAST, EXPERT* CYLINDER REPAIRS



Whether your cylinder moulds need new heads or complete overhauling, Cheney Bigelow can put them in first class condition quickly and expertly. Our large, modern plant and veteran craftsmen are equipped to handle cylinders of *any* size or style.

Cheney Bigelow has had years of experience servicing old cylinders and making new ones. For the best and fastest solution to your cylinder problems, call on Cheney Bigelow.

**CHENEY BIGELOW**

*Fourdrinier Wires • • Dandys • • Cylinders • • Wire Cloth*

CHENEY BIGELOW WIRE WORKS • 417 LIBERTY STREET • SPRINGFIELD, MASS.


## Brown Wins Trophy For Safety Record

BERLIN, N. H., April 10—With an outstanding record of lost time accidents reduced to a point 70 per cent better than the national average for the pulp and paper industry, the Brown Company has been awarded the coveted Liberty Mutual Safety Flag. The Woods Operations Division was likewise cited for an average 33 per cent better than the national average in this type of work. Underlining this record is the fact that this type of industry ranks as the eighth most hazardous out of thirty-two major industries; Woods Operations ranks second. Both records were made in the face of heavy wartime production pressure.

The award was made at the third Annual Safety Conference sponsored by Brown Company in cooperation with the Berlin Safety Council. The purpose of the Conference was to focus attention on the alarming increase of accidents in the homes, on the highways and in work. Under study at the present time are further ways and means of reducing the company's already low accident rate by introduction of new safety devices and by taking active interest in plant safety programs.

In a statement to the employees, F. G. Coburn, President, said, "The flag which flies on our flagstaff has been awarded for our successful safety program. Let's keep this flag flying. Let's continue to work together to make our jobs safer, more secure. Above all, let's be sure that we and our families stay free from the fear and pain and loss which accompany every serious accident."

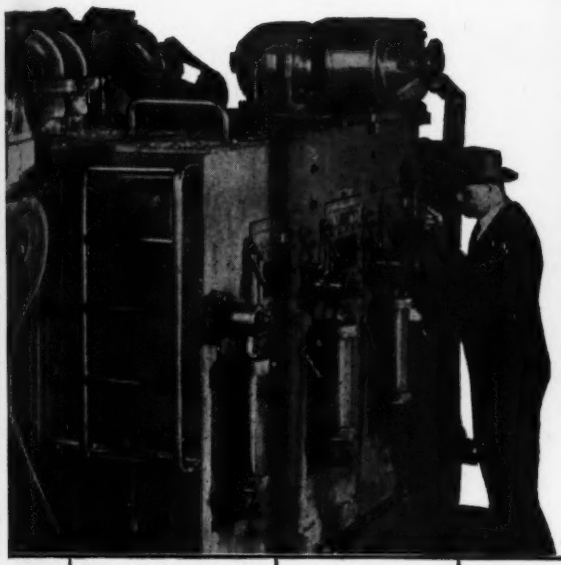
Brown Company, largest of its kind in New England, is one of the foremost producers of high grade pulps, specification papers, paper towels, allied cellulose and fibre products, as well as chemicals, used in widely varied industries.

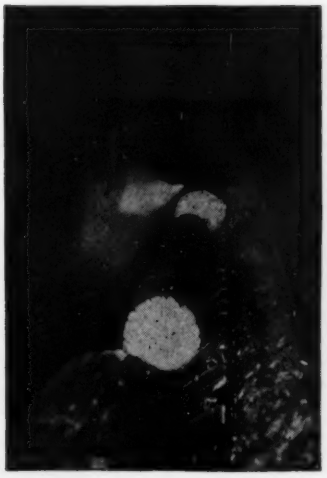
## March Casein Production Lowest Since 1922

WASHINGTON, D. C.—At 750,000 lbs. for March, dry casein production was 26 per cent less than a year earlier and 75 per cent below the March 1940-44 average, the Bureau of Agricultural Economics reports. Present production is the lowest of record for the month since 1922. The seasonal gain in production from February to March this year was slightly less than last year but considerably greater than the average seasonal increase.

Stocks of dry casein in the hands of domestic producers on March 31 were the lowest for the date in the five years for which records are available. Holdings of 2,150,000 lbs. were four per cent less than on March 31 last year, 59 per cent less than in 1944, 67 per cent less than in 1943, and 78 per cent less than in 1942.

# WITH STREAMBARKER!





**LOG GOES IN,** is engaged by 2 bed rolls which revolve it under 3 high-pressure, bark-removing water jets.

**LOG COMES OUT** — bark *clean,* with *no* brooming of ends, with *no* dirt, and *no* surface rot!

| Streambarker Schedule | | Water Pressure | | No. of Men, Convey., Barker, Inspec. | Capacity Cords per Hour | | Process in which Streambarked Wood is Used | Method of Bark Disposal | Miscellaneous Notes and Mill Comments |
|---|---|---|---|---|---|---|---|---|---|
| Hours per Day | Days per Week | Summer | Winter | | Summer | Winter | | | |
| 16 to 24 | 6 to 6½ | 750 lbs. | 750 lbs. | 4 | 9 | 6 | 50% Sulphite, 50% Groundwood | 100% to Boiler | Installing hot pond for winter barking. Expect to improve operation. |
| 9 | 6 | 670 lbs. | 670 lbs. | 3 | 10 | 8 | 100% Groundwood | 100% to Boiler | "All steam generated by wood waste and bark," say Mill Officials. |
| 24—auxiliary to drums | 6 to 6½ | 650 lbs. | 650 lbs. | 4 | | | Bleached Sulphite | Bark to Dump | Streambarker used on wood which other barking equipment cannot handle. |
| 9 to 12 | 6 | 730 lbs. | 730 lbs. | 4 | 13 | 8½ | 88% Sulphite 12% Groundwood | 100% to Boiler | "Pulp quality raised materially," say Mill Officials. |
| 16 | 6 | 670 lbs. | 770 lbs. | 3 to 4 | 9½ | | 60% Sulphite 40% Groundwood | Bark to Incinerator | Booster pump for winter barking has recently been installed. |
| Auxiliary to drums | 6 | 750 lbs. | 750 lbs. | 3 | | | Groundwood, Unbleached Sulphite | 100% to Boiler | Streambarker barks wood which other barkers cannot efficiently handle. |
| 24 | 6⅔ | 780 lbs. | 780 lbs. | 4 | 9 | 7 | 100% Sulphite | 100% to Boiler | Streambarker is first full-scale barker this mill has installed. |
| 17 | 6½ | 635 lbs. | 635 lbs. | 7 incl. unload, loading | 9 | 7½ | 100% Soda | Bark to Dump | One of 1st Streambarker installations—yet low maintenance right along. |
| 16 | 6⅔ | 750 lbs. | 750 lbs. | 4 | 10 | 7 | 100% Sulphite | 100% to Boiler | "We've eliminated knot boring, hand-cleaning, etc.," state Officials. |
| 24 | 7 | 650 lbs. | 750 lbs. | 3 | 9½ | 6½ | 50% Sulphite 50% Groundwood | ⅔ to Boiler, ⅓ to Dump | Streambarker cleans logs that cannot be cleaned by other barkers. |
| 8 | 6 | 675 lbs. | 675 lbs. | 5 | 10 | 6½ | 100% Soda | 100% to Incinerator | "Barker operation and capacity both very good," say Mill Officials. |
| 16 | 6 | 675 lbs. | 675 lbs. | 4 | 10 | 9½ | 50% Sulphite 50% Groundwood | 100% to Boiler | Booster pump being installed to raise pressure to 775 pounds. |

**PREPARATION**—Hydraulic Barkers, Chip Screens, Saws, Slashers, Grinders.

**COOKING**—Digesters, Blow Tanks, Kilns, Heat Exchangers, Condensers.

**WET ROOM** — Vibrating Screens for use as Thickeners, dewatering rejects, etc.

**PAPER-MAKING** — special drives for Paper Machines, Rewinders, Calenders.

**POWER** — all types of Power Generation, Distribution and Control.

**MOTORS** and control — all types a-c and d-c, 1 to 7000 hp — Gearmotors.

**TEXROPE** V-belt drives — fractional to 5000 hp — constant and adjustable.

**PUMPS**—Single and Multi-Stage, 10 to 150,000 gpm — Paper Stock Pumps.

## Stein Hall Advances Two To be Assistant Managers

Stein, Hall & Co., Inc., has promoted two salesmen, E. M. Clevan and D. H. Lipman, to be assistant managers of its New York Branch at 285 Madison Avenue. C. J. Dunachie is manager of the branch. Mr. Clevan is well known in the paper trade, especially in Metropolitan New York. He joined the company 32 years ago and left in 1918 for Army service in the First World War. After the war he returned to Stein-Hall and has been a member of the New York sales staff since that time.

Mr. Lipman, who joined the New York sales staff in 1938, specializing in the food products market, has many friends in the baking, ice cream and other food processing fields. He entered the Navy in 1944 as Lieutenant (j.g.) and was honorably discharged early this year with the rank of Lieutenant U.S.N.R.

## Dr. Teppema Joins Taypit

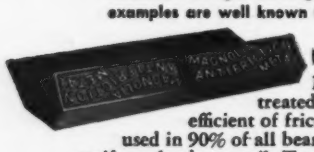
MORRISTOWN, N. J.—Dr. Jan Teppema has joined International Plastic Corporation as director of laboratory operations. Since 1943, Dr. Teppema has been chief chemist of the B-B Chemical Company, Cambridge, Mass., where his work—during the war years—was devoted to the applications of adhesives in war industry. Before joining B-B, he was with the Goodyear Tire & Rubber Company—having previously operated his own firm, Tipter Chemical Company, industrial chemical manufacturers. He studied at Amsterdam and Leyden Universities in Holland where he earned his Ph.D. in chemistry.

## Rota-Tronic Instrument Records Low Flow Rates

A new bulletin describing a low flow rate measuring instrument has been published by the Fisher & Porter Company, Hatboro, Pa. Drop-by-drop flow rates right down to less than five milliliters of liquid per minute, and for gases to less than 25 milliliters per minute, can now not only be measured but remotely and automatically recorded, controlled and totalized with the recently developed Rota-Tronic instrument. This instrument when attached to Rotameters detects, by electronic means, the Rotameter float position. The minute electric current is amplified a thousandfold to produce enormous power at the recorder pen. The manufacturer asserts that flow rates encountered in laboratory or pilot plant operations as well as the small industrial flow rates such as of perfume essence, vitamin additives, inhibitors and synthetic rubber mercaptan modifiers now can be accurately and reliably recorded, controlled and totalized.


60 YEARS OF PROVEN PERFORMANCE!

Continued research, production and development of bearing metals and base alloys since 1886 qualify Magnolia Metal Company to recommend the right bearing metal for each application. These popular examples are well known to Magnolia dealers in your industry.



FOR SPEED AND UNIFORM LOADS:

MAGNOLIA Anti-Friction Metal, a graphite treated, self-lubricating alloy, has the lowest coefficient of friction of any known bearing metal. It is widely used in 90% of all bearing operations where steady, high speeds and uniform loads prevail. Typical examples are in line shafting, roll bearings, conveyor bearings, electric motors above 10 H.P. and general purpose bearings.

FOR SHOCK LOADS:

Defender Bearing Metal is carefully alloyed for malleability, strength and toughness to withstand heavy shock loads. Continuously used in the bearings of Jordan heaters, pumps and steam engines, this shock-proof metal assures excellent service.

FOR CONSTANT HEAVY LOADS:

Pyramid Bearing Metal has given veteran performance under high heat and heavy load conditions. Characteristic of its resistant capacities under severe service is its continued use in calender stacks, and larger electric motors.

More than 100 uses of Magnolia Bearing Metals are outlined and illustrated in our 8 page bulletin. Write for your copy today.

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MAGNOLIA BEARING METALS


## Lincoln Foundation Program Offers Prizes for Machine Plans

An exceptional opportunity for those engaged in the design, manufacture or construction of any type of processing or plastics machinery or parts, is offered by The James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, in the announcement of a new $200,000 "Design - for - Progress" Award Program.

"Processing or Plastics Machinery" is admitted as one division of the "Industry Machinery" classification and includes any machinery used in brick-making—cement making—coal mining—foundry — gas manufacturing and producing — commercial laundering — metal-mining — paint-making — pottery and glass-making—pulp and paper manufacturing—rock products and stone quarrying — rubber manufacturing—tobacco-making—wood lumbering and milling, and woodworking—leather processing. Processing machinery maintenance workers may also enter the competition under the program's "maintenance" classification.

Four awards, totalling $1,600 established for this division of the "Industry Machinery" classification are:

| | 1st | 2nd | 3rd | 4th |
|---|---|---|---|---|
| Division .... | $700 | $500 | $250 | $150 |

Paper in this "Processing or Plastics Machinery" division are also eligible for the "Industry Machinery" classificational awards of: $2,500, $1,500, $1,000, $800. Three winners of divisional and classificational awards will also be possible recipients of the main program awards of $10,000, $7,500 and $5,000, respectively. The principal program awards, which may be won by a paper in the "Industry Machinery" classification, is $13,200.

## Starch Products Elects Don Pascal a Vice President

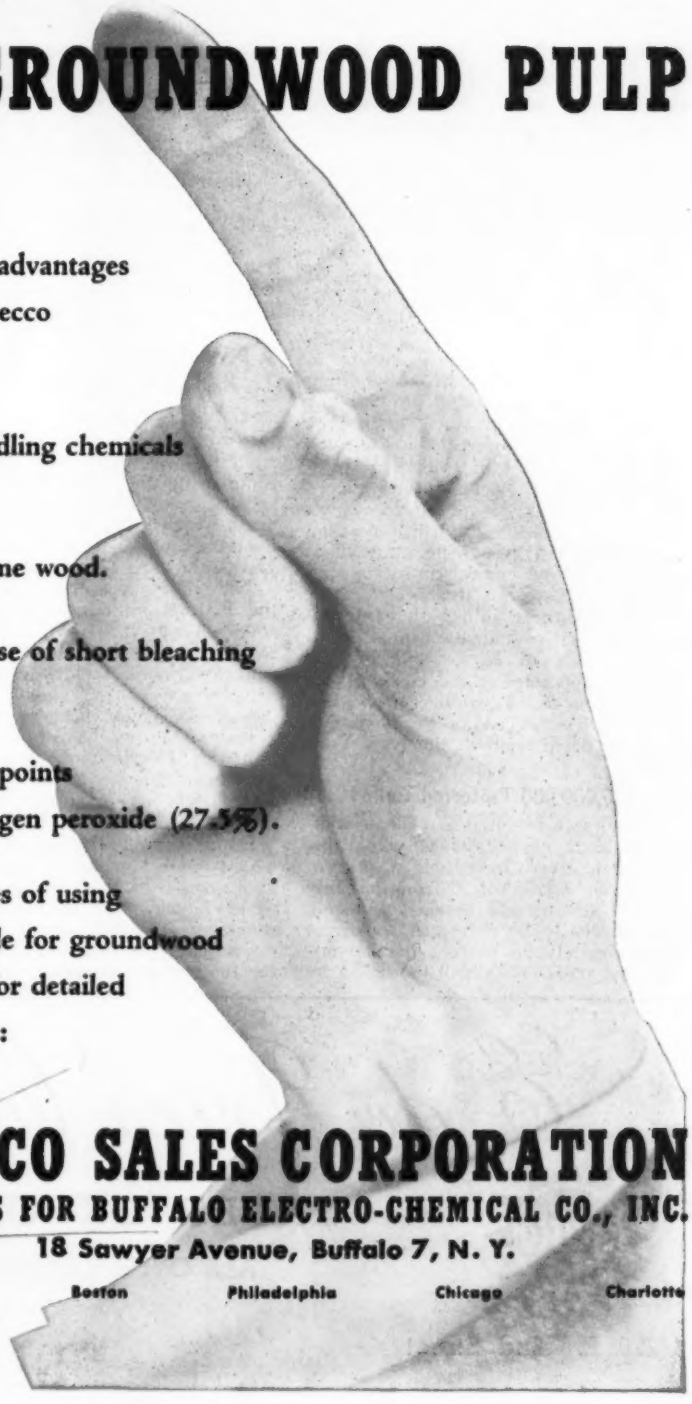
Donald D. Pascal, manager of the midwestern division has been elected an assistant vice-president of the National Starch Products Inc.

"Don" Pascal, as he is known by his many friends in the trade, joined the original National Adhesives organization 16 years ago, advancing through the laboratory and service departments to become, in turn, manager of the Philadelphia branch, director of Technical service, technical assistant to Chester A. Gage, vice-president in charge of sales, and more recently manager at Chicago.

## Pennsalt Names Dr. Gall To Research Post

WYNDMOOR, Pa.—Dr. W. A. Lalande, Jr., Director of Whitemarsh Research Laboratories, Pennsylvania Salt Manufacturing Company, has appointed Dr. John F. Gall as assistant research supervisor to assist in the coordination of the experimental activities of the research division of Pennsalt's research and development department.

# Consider the BRIGHTNESS of GROUNDWOOD PULP



HERE are three outstanding advantages of bleaching groundwood pulp with Becco Hydrogen Peroxide:

1. Simplicity and safety of handling chemicals in the mill.
2. Uniform results with the same wood.
3. Maximum production because of short bleaching time required.

Brightness increases of from 10 to 15 points may be obtained with 2% hydrogen peroxide (27.5%).

Why not investigate all the advantages of using Becco Hydrogen Peroxide for groundwood bleaching? Write for detailed literature to:

**BECCO SALES CORPORATION**
**AGENTS FOR BUFFALO ELECTRO-CHEMICAL CO., INC.**
**18 Sawyer Avenue, Buffalo 7, N. Y.**

New York Boston Philadelphia Chicago Charlotte

## International Paper Advances Three

Following meeting of the Board of Directors of International Paper Company this week, John H. Hinman, president, made known that all present officers of the company had been re-elected to serve for the coming year and that three new officers had been named. Erling Riis, a director, was elected vice-president. Carl S. Volk, assistant treasurer, was elected treasurer, thus relieving H. R. Weaver, who has been serving both as first vice-president and as treasurer, of a part of his duties. Harold F. LaMarche was elected auditor to fill the vacancy created by the recent death of B. O. Booth.

All three of the new officers have been with International for many years. Mr. Riis came to the company in 1927 when the properties of the Louisiana Pulp and Paper Company were acquired. He has been in charge of manufacturing and construction operations of the Company's southern mills since that time.

Mr. Volk joined the Company in 1916, serving first with the auditing department and since 1919 with the treasury department. In 1940 he was transferred to Montreal, was elected assistant treasurer of Canadian International Paper Company and placed in complete charge of that company's finances. He continued in this position until June, 1945, when he returned to the New York office and was appointed an assistant treasurer.

Mr. LaMarche joined the International Paper organization in 1913 at its Fort Edward, N. Y., mill. In 1920 he was appointed chief clerk at the Watertown, N. Y., mill. Since May, 1923, he has served in the company's treasury department at the New York office.

### $20,000,000 Preferred Called

The directors voted to call an additional block of $20,000,000 par value of Cumulative Convertible 5 percent Preferred Stock for redemption July 5, 1946, at 105 and accrued dividend. The shares to be redeemed constitute approximately 25 percent of the outstanding issue. They will be drawn by lot from stock of record May 23, 1946. The right to convert each preferred share into two and one-half shares of common stock will continue with respect to shares drawn for redemption until the close of business on the last business day prior to the redemption date of July 5, 1946.

### Exchange Offer Decision Postponed

The Directors postponed, for further consideration at the meeting scheduled to be held May 28, 1946, decision as to whether or not shares of the new class of preferred stock approved by stockholders at the recent annual meeting will be offered in exchange for shares of the present Cumulative Convertible 5 percent Preferred Stock.

### Dividends Declared

The regular quarterly dividends of $1.25 a share on the Cumulative Convertible 5 percent Preferred Stock and 50 cents a share on the Common Stock were declared for payment June 29, 1946, to holders of record June 7, 1946.

## A.P.W. Confirmed in Right To Red Cross Symbol

ALBANY, N. Y.—The A. P. W. Paper Co., Inc., of Albany has won the right in U. S. Supreme Court to continue using the name Red Cross and such a symbol on its packaged products which it started in 1897. Justice Douglas delivered the 7-0 decision. Justice Jackson did not participate.

The ruling was on an appeal by the Federal Trade Commission from a decision by the U. S. Circuit Court in New York City. The Circuit Court said that under a 1910 congressional act the commission could not forbid use of the name and symbol to concerns which used them before 1905.

Justice Douglas said the 1910 act preserved the right of early "good faith users" to continue the use of the words and the symbol.

Douglas said the Supreme Court would not undertake to prescribe the final order which the commission should enter. "The fashioning of this remedy is a matter entrusted to the commission which has wide latitude for judgment," he said.

## Chase Nearly Ready With New Bag Plant

CROSSETT, Ark.—Chase Bag Company, of New York City, has filed articles of incorporation with the Secretary of State at Little Rock for its new commercial bag plant here. Located only a short distance from Crossett Paper Mill, the bag plant is entering final stages of construction. Offices will be opened here at an early date, it is reported.

According to officials of Chase Bag Company, the Crossett plant will employ between 30 and 40 persons. This later will be increased to 75 or 100. Approximately three-fourths of those employed will be women.

A spokesman for the management stated that three carloads of machinery have arrived here and four carloads are in transit, probably tied up in freight yards somewhere. George Bergman, engineer for construction, said the building proper is 99 percent complete.

He added that Chase Bag Company's plant here will be equipped with a new type of heating system, with no radiators against walls and heating pipes in view. The building is 175 by 400 feet in size. All steam pipes laid in and beneath the concrete floor, and will warm the floor which will radiate enough heat to warm the interior of the building. The system insures a uniform temperature, it was pointed out.

## Prof. Libby Lectures on Semi-Chemical Pulping

The Graduate Course "Pulp and Paper Technology" which is offered in the evening session at the Polytechnic Institute of Brooklyn, this week heard Prof. C. E. Libby of the New York State College of Forestry. Prof. Libby spoke on the subject of "Semi-Chemical Pulping". His lecture is part of a general treatment of the subject of Pulp and Paper Technology in thirty lectures which will again be offered during the next academic year and will be under the direction of R. S. Aries.

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## B&W MULTI-FUEL CIRCULAR BURNER for Pulverized Coal, Oil, and Gas

This burner provides in ONE compact unit the features of the B&W Combination Oil and Gas Burner and those of the B&W Circular Burner that is so widely used for pulverized fuels. This combination, properly co-ordinated with furnace and boiler design, provides a wide latitude in choice of fuels:—all grades of coal and petroleum coke in pulverized form, oil, and gas. These may be burned singly or in any desired combination. High combustion efficiency with *any* fuel is assured through turbulent mixing of fuel and air. Let Babcock & Wilcox engineers explain how this equipment can simplify your fuel-burning problems.

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## Canadian Summer Meeting

The Technical Section of the Canadian Pulp and Paper Association will hold its summer meeting at Fort William and Port Arthur, Ontario, on June 6-8, 1946. This section is rapidly becoming the center of one of Canada's pulp and paper manufacturing areas. Many will travel to the meeting by the C.P.R. steamer Keewatin which leaves Port MacNicholl at 5:30 p.m. June 4th.

On Thursday, June 6th, the following program will be held:

Board Group: —Discussion of questions submitted by mills.

Fine Paper Group:—Discussion of defoamers, felt washing compounds, etc., and a consideration of the replies to a questionnaire on refiners.

Engineering Group:—Consideration of a design for a complete 400-ton groundwood mill.

Alkaline Pulping Group:—Discussion of alkaline pulp mill maintenance.

Waste Group:—The Utilization of Sawmill Waste for Chemical Pulp. Consideration of type of material, volume of solid wood, loss in barking, chipping methods, and effect on pulp quality.

In the afternoon there will be visits to the mills of the Great Lakes Paper Company, Provincial Paper Mills, and Thunder Bay Paper Company.

On Friday morning the following program will be held:

Sulphite Group: "Spray Sulphur Melter and Waste Heat Boiler" by J. W. MacKay, Welland Chemical Works, Ltd.

"Spray Cooling of $SO_2$ Gases and Modern Gas Absorption and Recovery Systems" by A. H. Lundberg, G. D. Jenssen Company.

"Instrumentation in Sulphite Mills."

Alkaline Pulping Group: — Improved Heat and Chemical Recovery in the Sulphate Process" by G. H. Towlinson, J. N. Schwartz, H. D. Orloff and J. H. Robertson, Howard Smith Paper Mills.

"Sulphate Pulp Mill Byproducts."

Mechanical Pulping Group:—Conditioning of the Stone Surface on a Miniature Grinder" by S. A. Collicutt, Powell River Co., Ltd.

"The Effect of Reversing Stone Direction" by W. A. de Montmorency, Pulp and Paper Research Institute of Canada.

Neswprint Group:—"The Double Suction Couch" "Slime Control in Newsprint Mills."

Fine Papers Group:—Discussion of Savealls.

In the afternoon there will be the following program:

Board Group: — "Cutting and Handling Board Sheets at High Speed" by G. W. Hamblet, Jr., Hamblet Machine Company.

Heat and Power Group:—"The Insulation of Revolving Pressure Vessels" by J. T. MacDonald.

A motion picture on insulation will be shown.

Printability Group:—Test Methods for Measuring the Printability of Paper."

Wood Chemistry Group:—"The Various Sulphite Pulping Procedures Using Different Bases for Combined SO" by R. S. Hatch, Weyerhaeuser Timber Company, Longview, Wash.

Mechanical Pulping Groups:—"Screening Groundwood Pulp," "The Cowan Screen" by E. Cowan.

The Section will hold a dinner in Legion Hall, Port Arthur.

The annual golf tournament will be held at the Port Arthur Links. The return boat will sail for Port MacNicholl at 1 p.m.

## Western New York TAPPI Discusses Size and Color

The Western New York Group of the TAPPI Empire State Section met at the Prospect House, Niagara Falls, N. Y., Wednesday evening, May 8.

A. H. Nadelman of the International Paper Company, Niagara Falls, N. Y., was selected as chairman for the ensuing year. J. W. Youngchild, I. P. Company, Tonawanda, N. Y., was appointed chairman of the speakers committee: G. H. Rand, I. P. Company, Niagara Falls, chairman of the dinner committee; R. D. Rusch, I. P. Company, Tonawanda, N. Y., chairman of the attendance committee; and P. R. Rolleston, Moore Business Forms, Inc., Niagara Falls, chairman of the publicity committee.

H. A. Spencer of Knowlton Bros., Watertown, N. Y., and chairman of the Empire State Section was present and made a brief address. The Heller & Merz Dept. of the American Cyanamid Company, presented a sound film entitled "A Portrait of an Industry." This film depicted some of the history of the dye industry and illustrated the part taken by various units of the American Cyanamid Company in the manufacture of H. & M. dyes.

F. O. Sundstrom of Heller & Merz talked on "The Influence of Rosin Size on the Retention of Acid Colors" and reported on certain laboratory research that tends to indicate which of these colors require improved technique in their economical applications.

Those present were: S. I. Anderson, F. H. Ayers, W. E. Beazley, R. M. Bishop, J. M. Booth, F. J. Bouley, E. M. Bradley, H. F. Brown, D. A. Cameron, J. Campbell, H. J. Cronin, F. W. Decker, J. J. De Jongh, H. Duston, M. Eldridge, F. J. Gillis, B. B. Gralow, L. W. Hebert, F. P. Heil, R. J. Hopkins, J. T. Jaeger, E. J. Johnstone, G. J. Keller, C. E. Knox, J. H. Loomis, J. Morrison, A. H. Nadelman, G. E. Norton, L. M. Pfister, G. H. Rand, Jr., P. R. Rolleston, R. D. Rusch, S. M. Scalletta, O. Schiesser, F. P. Shearer, W. F. Schroeder, W. B. Shrubsall, C. O. Simpson, A. J. Smith, H. A. Spencer, B. J. Staneslow, W. O. Stauffer, F. O. Sundstrom, F. S. Tolman, P. D. Switzer, C. O. Webber, C. F. Wellington, J. W. Youngchild.

## Norbert Bernheimer Starts Consulting Practice

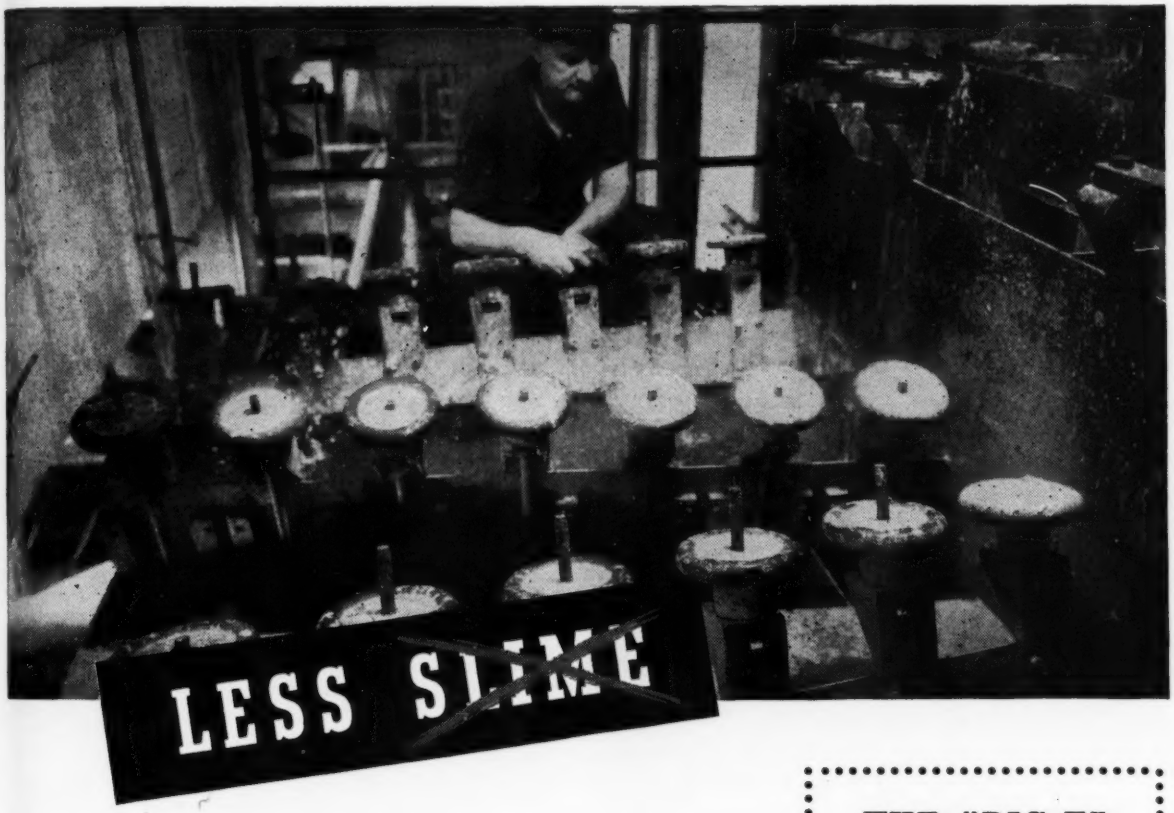
Norbert Bernheimer, recently pulp manufacture supervisor for the Hollingsworth & Whitney Company, Waterville, Maine, has established a consulting practice with headquarters in Waterville (P. O. Box 572).

Dr. Bernheimer was a student of Dr. Schwalbe at Eberswalde, Germany, and a graduate of Darmstadt. He early attracted favorable attention because of his researches in the chemistry of Mitscherlich pulping. For 24 years he was connected in a management capacity with the firm of Vogel & Bernheimer. This company was one of the first to use the Mitscherlich process and had the reputation of being one of the best equipped mills in the industry. Some of its high quality pulp was sold in the United States.

When his mills were sold under political pressure during the Nazi regime Dr. Bernheimer left Germany and came to the United States where he has been carrying on pulping investigations for some large sulphite pulp manufacturers in New England.

Dr. Bernheimer has now made his services available to any sulphite manufacturer who wishes to improve the quality and yield of pulp.

# No. 1 of the "BIG 7" ADVANTAGES of STAINLESS EQUIPMENT...




Inside and out, this stock-mixing box does 24-hour duty. Bacteria and water attack the inner walls. Moisture condenses in steady streams outside. Yet ARMCO Stainless Steel fights slime to a standstill.

Slime growth and accumulation are slowed in their tracks because ARMCO Stainless has a hard, smooth surface. When equipment is properly designed there is no place for bacteria to take a toehold. Given just ordinary care, this rustless steel won't pit or corrode.

How this could speed your production — *and your profits!* No frequent and time-consuming clean-ups. With ARMCO Stainless in your "key" equipment, clean pulp *comes out* clean. No waste. No rust spots. No costly rejects from contaminated pulp and paper. Frequent re-threading is a worry of the past.

Ask your equipment fabricator about ARMCO Stainless Steel. Or write us direct. The American Rolling Mill Company, 2931 Curtis St., Middletown, Ohio.

## THE "BIG 7"

1. Less Slime
2. No Chemical Reactions
3. Fewer Clean-Ups
4. Less Breakage
5. Cleaner Paper
6. Greater Output
7. Longer Service

STAINLESS ARMCO STEEL

*The American Rolling Mill Company*

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

W. L. Cook, Editor

## Fall and Rise of Abitibi

The closing chapter in the tangled relations of the great Abitibi Power and Paper Co., recorded last week, was probably the quietest of the many court appearances of that company, and its return to private ownership marks the end of the longest receivership in Canadian history—14 years. During the newsprint boom days of the early twenties Abitibi had engineered the taking over of five other large companies. Then came the crash in 1932 when, in a few short months, it dropped from seemingly high solvency to a bankruptcy which has just ended. Perhaps the most surprising fact in connection with the long-drawn-out legal battles over the company is the financial standing in which the company now emerges. From a seemingly hopeless plight in 1932, it improved under receivership to reduce its bonded indebtedness by about $23,000,000.

It was largely this improvement, brought about in part by war-increased demands for paper, that made final settlement possible. It provided a means of satisfying the divergent security holders with only a slight increase in the 1932 debt structure of about $50,000,000. The common shareholders, who saw their stock drop from $85 in 1928 to only 12½ cents in 1933, still take a substantial loss. But had the company been sold when it was placed on the auction block in 1943, their equity might have been wiped out entirely. Through a redistribution of securities, the losses of bondholders and preferred shareholders are slight.

Abitibi was but another Canadian paper company until 1927 with mills at Iroquois Falls and Smooth Rock Falls. Then, in 1928, it got the urge to expand and in a merger involving $100,000,000, took over five other companies. These firms, with plants, timber and power rights, stretching across Manitoba, Ontario and Quebec, included the Spanish River Pulp and Paper Mills, Fort William Power Co., Manitoba Paper Co., St. Anne Paper Co. and Murray Bay Paper Co.

A year later it joined with several other newsprint firms to form the Newsprint Bond and Share Co., for the purpose of taking over the Bathurst Power and Paper Co. Next it acquired half-interest in Thunder Bay Paper Co. And then, to complete its expansion, took over the Provincial Paper Co.

To consolidate the unwieldy capital structure of all these companies, $50,000,000 five per cent. bonds and $28,000,000 six per cent. preferred shares, were issued. The common stock was split two for one and increased to 1,500,000. Also outstanding were seven per cent. prior preferred shares.

Even before the mergers were completed, Abitibi ran headlong into trouble. The steadily increasing capacity of Canadian newsprint mills began to exceed the demand. The price started downward and several mills had to be closed. To complicate matters, the deal to take over Bathurst Power and Paper Co. failed and Abitibi lost $951,000 in cash. Then Consolidated Paper defaulted on its purchase of a half interest in Thunder Bay Co. and Abitibi had to pay out another $2,000,000 to protect its interests.

The final blow came from another source—the Ontario Power Service Corp. This company was formed to develop power at Abitibi Canyon. Abitibi had sold a $20,000,000 bond issue to finance the project, but another $5,000,000 was needed to complete it. Its inability to raise this money precipitated the crisis.

The company went into receivership in September, 1932. Just about the same time the price of newsprint fell from $60 and $70 a ton to only $40 a ton. Along with Abitibi, about half of the Canadian newsprint companies were forced into bankruptcy.

A study of the company's position by the receiver indicated that the 1928 expansion might have been a bit hasty and ill-conceived. Two of the Spanish River mills at Espanola and Sturgeon Falls were high-cost plants. Added to this, the Murray Bay plant, which was being equipped with second-hand machinery at the time of the merger, never went into production.

To rid the company of as much deadwood as possible, the Murray Bay mill was sold for $75,751—a book loss of $5,799,000. The government took over the Power Service Corp. at a further loss to Abitibi, and finally, in 1943, the Espanola plant was sold for $975,000—a book loss of $8,443,000.

From 1932 until the first half of 1936, Abitibi's earnings were not sufficient even to meet depreciation. But when a surplus appeared in the last half of 1936, bondholders began pressing for a reorganization.

There were literally dozens of plans submitted, but only one reached the courts. It was advanced by J. P. Ripley of New York, and provided for the issue of $12,000,000 first mortgage bonds which would have preference over the existing bonds. This split the bondholders into two groups, with a minority opposing the plan. The junior security holders and the company's creditors also opposed it because they felt it did not recognize their equity.

An application to the supreme court for approval of the Ripley plan started the lengthy litigation. Mr. Justice McTague, now Ontario securitties commissioner, ruled against it. The bondholders appealed, but the McTague decision was upheld. In 1938 the Ontario government entered the picture by giving Abitibi one year to wind up its affairs or forfeit its power and timber rights. The time was later extended.

With the outbreak of war, the company's position began to improve. In 1940 the bondholders applied to the court for permission to sell the property. The application met strong opposition, but the court finally approved. The ruling was appealed, but the appeal court sustained the sale order.

October 16, 1940, the day of the sale, promised to be a dark day for the junior security holders. Fortunately for them, the bondholders' bid of $30,000,000

### Calendar of Coming Events

**June 6-8. 1946—Technical Section, Canadian Pulp and Paper Association, Royal Edward Hotel, Port Arthur, Ont.**

**June 14-15, 1946—TAPPI Empire State Section, Thousand Islands Country Club, Alexandria Bay, N. Y.**

**June 17-20, 1946—American Pulp and Paper Mill Superintendents Association, Annual Convention, Poland Springs, Me.**

**June 28-29, 1946—TAPPI Maine-New Hampshire Section, Rangley Lakes House, Rangley Lakes, Maine.**

**November 4-6, 1946—National Paper Trade Association, Fall Convention, Palmer House, Chicago, Ill.**

was rejected by the court as being too low. A second bid of $43,000,000 by the International Service Co. was also turned down.

Following the auction, the Ontario government appointed a royal commission. It also reversed its earlier stand in the dispute by rescinding an order-in-council in which it had approved of any settlement satisfactory to the bondholders.

The royal commission, headed by Mr. Justice McTague, advised against the sale, and advocated a reduction in interest rates on the company's indebtedness. The government immediately passed the contentious Abitibi Moratorium Act, which stayed all litigation until the commission's report could be studied.

The bondholders contested the act's legality in the courts, and were successful in having it declared ultra-vires. The court, too, granted the bondholders' application to sell the company without reserve bid, explaining it was time the bondholders realized something on their investment. The junior security holders, which included the powerful Lord Rothermere interests, appealed the decision, but the sale order was upheld.

Plans for the sale were proceeding when the court decision was appealed to the privy council. Their lordships reversed the ruling of the Ontario courts, declared the moratorium act intra-vires, and set aside the sale order.

But even with this decision, settlement appeared a long way off. Final solution came when the Ontario government appointed a three-man committee in September, 1943, to study the problem. Headed by Hon. Frank J. Hughes, the committee succeeded in bringing in the report that satisfied all groups, and application was made last month to take the company out of receivership. The $100,000,000 Abitibi riddle had finally been solved.

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## Production Ratio Report*

(Production as per cent of six-day capacity)

### COMPARATIVE WEEKLY SUMMARIES

| Current Weeks—1946 | | Corresponding Weeks—1945 | |
|---|---|---|---|
| March 30 | 104.9 | March 31 | 88.9 |
| April 6 | 104.1 | April 7 | 86.8 |
| April 13 | 103.6 | April 14 | 87.4 |
| April 20 | 102.5 | April 21 | 90.7 |
| April 27 | 100.6 | April 28 | 87.0 |
| May 4 | *107.3* | May 5 | 90.7 |

### COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1945 | 86.7 | 89.4 | 90.2 | 88.1 | 89.8 | 91.2 | 80.8 | 88.6 | 90.2 | 95.9 | 95.5 | 91.0 | 89.7 |
| 1946 | 94.7 | 98.4 | 104.4 | *102.7* | | | | | | | | | |

### COMPARATIVE YEARLY SUMMARIES

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|---|
| Year to Date | 80.2 | 85.5 | 91.3 | 102.5 | 88.7 | 88.3 | 88.5 | *100.1* |
| Year Average | 83.4 | 85.6 | 97.4 | 90.4 | 87.8 | 88.1 | 89.7 | |

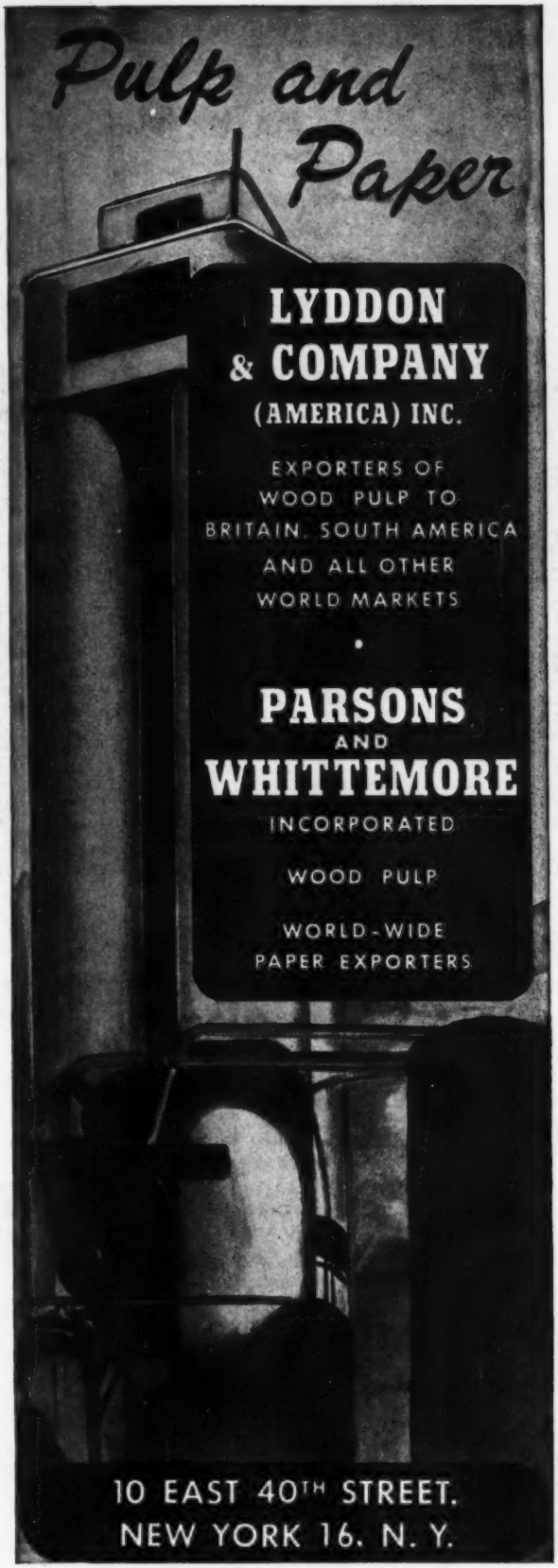
*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

### PAPERBOARD OPERATING RATIOS †

| Current Weeks—1946 | | Corresponding Weeks—1945 | |
|---|---|---|---|
| March 30 | 100 | March 31 | 100 |
| April 6 | 99 | April 7 | 92 |
| April 13 | 101 | April 14 | 97 |
| April 20 | 101 | April 21 | 98 |
| April 27 | 95 | April 28 | 99 |
| May 4 | *101* | May 5 | 97 |

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1945 | 91 | 95 | 97 | 97 | 96 | 86 | 90 | 91 | 97 | 95 | 85 | 93 | |
| 1946 | 90 | 97 | 100 | *99* | | | | | | | | | |

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



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Edited by R. G. Macdonald, Secretary

# Sulphite Pulps–Handling After the Digester*

By George H. McGregor[1]

## Abstract

*Washing and screening operations represent an exceedingly important factor in the manufacture of a uniform, high quality unbleached sulphite pulp. Any special effort expended in the planning, layout, operation, maintenance, control, and modernization of these departments will be readily reflected in quality and production of product.*

*At nominal installation, operation, and maintenance cost, residual sulphur dioxide and/or heat, may be recovered at the blow pits, resulting in appreciable savings. Thorough washing of unbleached pulps will assist screening operations through the elimination of foaming, will save chlorine in the bleach plant, minimize pitch problems in the screen room and on the paper machine. The quality, quantity, and method of distribution of wash water are related to the efficiency of washing. Improvements in materials of construction have resulted in increased production, lower maintenance costs, and better quality product. The use of an auxiliary vacuum type filter after the blow pits has decided benefits. A blending chest for pulps from various cooks assists in the preparation of a uniform quality product. Chrome nickel and chrome plated screen plates insure high production rates and good quality, at low unit cost. Control of the operation should receive the attention required for this important phase of manufacture. In general washing and cleaning operations represent a very low percentage of the cost of production of unbleached sulphite pulp, yet they represent a vital factor in the quality of product produced. Therefore, due consideration should be given to type of equipment, space requirements, operation, maintenance, and control.*

Probably no phase of sulphite pulp manufacture is more pertinent to the ultimate preparation of an acceptable stock than the equipment and operations involved in washing and cleaning. Yet such factors to a large extent receive less attention than desirable, especially as related to the fundamental technology and other phases of manufacture or treatment, whether it be bleaching, preparation for sale on the unbleached market, or direct conversion to paper in an integrated mill.

This discussion will review a few of the more important problems and the progress in technology and equipment in handling unbleached pulp as released from the digester until thickened for one use or another after final screening. The problem is considered broadly, especially relating to predominant grades of unbleached sulphite produced today, such as news grade, bond grade, Mitscherlich, and extremely soft sulphite manufactured for the chemical and absorbent tissue field.

## Blow Pits

Upon release from the digester, whether by the common practice in this country of "blowing" or the somewhat popular European method of "dumping," the problems attendent with the separation of vapors or gases and waste liquor from the prime pulp product are faced first. Factors encountered include separation of vapors and gases either for recovery for further use or distribution to the atmosphere, construction of the blow pit or dump chest, type of blow pit drainage system, use or non-use of water in pit at the blow, properties, volume, and distribution of water used for washing, blow pit fiber losses, and stock removal from the pit.

### Recovery of $SO_2$

Until recent years, and still to a large extent today, vapors and gases from a sulphite blow pit were emitted to the atmosphere at a sufficient height to minimize distribution throughout the atmosphere in the immediate vicinity of the plant proper. It has been clearly demonstrated by existing installations that residual $SO_2$ gas in the digester at the blow can be recovered at a nominal capital expenditure, resulting in a material saving of sulphur and elimination of the nuisance of atmospheric contamination. In addition it has been demonstrated that the heat released at the blow has a real value and can be recovered at reasonable expenditures to yield hot water of sufficient volume to materially assist pulp washing practices, either in the blow pit itself or certain phases of bleaching operation, provided a bleach plant is part of the plant proper. Consider the recovery of free $SO_2$ gas at the blow. Today there are two principles applied in actual practice to recover $SO_2$ gas. One is the absorption of the $SO_2$ gas in water to yield a weak solution of sulphurous acid at 35 to 40°C., with subsequent cooling of this weak sulphurous acid solution, and conveying at system rate of flow and proper temperature to the acid plant as the source of liquid to prepare calcium bisulphite storage acid. The other involves recovery of the $SO_2$ gas in water at such a temperature that the gas will be volatilized and transferred directly to the Jenssen or milk of lime towers. The temperature of the residual water may be maintained such that it could be well adapted to initial pulp washing. It has been demonstrated in practice that about 50 to

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[1]Member TAPPI; Minnesota and Ontario Paper Co. International Falls, Minn.

75% of the free $SO_2$ at the blow is recoverable. The remainder is lost with the waste liquor and with the stock due to inability to diffuse through the pulp mass into the blow stack. In a continuous system, such as described under the first principle, weak sulphurous acid solutions have been obtained of 0.75% free $SO_2$ concentration, continuous operation and head of liquid on the storage tank minimizing volatilization of $SO_2$ gas. As typical examples of sulphur recovery, consider three 150 ton unbleached sulphite mills cooking at 137°C. maximum temperature and a common liquor ratio of 4.5 to 1; one mill, such as news, with a free $SO_2$ test at the blow of 0.25%: one mill with a free $SO_2$ test at the blow of 0.50%; and a mill, such as those using high free $SO_2$ test acid, with a free $SO_2$ test at the blow of 0.75%. Assume the wood moisture content to be 40%, the pulp yield as 46%, the digesters direct steamed at 5000 pounds of steam per ton of pulp, and 1650 gallons of cooking acid per ton of pulp. At 50% recovery of the free $SO_2$ at the blow, calculations show that mill No. I with 0.25% free at the blow can recover 14.9 pounds of sulphur per ton of pulp. At 300 operating days per year and at a value of $25 per ton, the sulphur savings per year would be $7,500. The retirement, maintenance, and operating costs of necessary equipment would be nominal. Mill No. I would approximate a net saving of $5,000 per year. In like manner, mill No. II with 0.50% free at the blow would recover 29.8 pounds of sulphur per ton and under the same conditions as I, the sulphur saving per year would be $15,000. On the same basis, the sulphur savings for mill III would be 44.7 pounds per ton of pulp valued at $22,500 per year. The capital expenditure involved in recovery of the sulphur, of course, depends on the local physical set-up. Where the blow pits are arranged in line with a gas and vapor breeching and a single vomit stack, as exists in a few mills, the expenditure would be least. In the case of principle one, e.i., absorption of the gas, there would be required water storage, weak sulphurous acid storage, suitable sprays in the vomit stack, a weak sulphurous acid solution cooler, pumps, piping, valves, and fittings. Greatest success would be derived from use of water from a deep well at constant, fairly low temperature. Materials of construction would have to be resistant to effects of the gases and solution. It has been demonstrated that stainless steel type 316 metal, or $Ka_2SMo$ is quite adaptable to sulphite practice. Where the blow pits are staggered, the piping arrangement may be a little more involved. In the case of principle two involving the volatilization of the gas, a hot sulphurous acid storage would be provided or even stainless steel heat exchanger could be utilized. In either instance it will be found on calculation that usually the savings will warrant a reasonable capital expenditure.

### Recovery of Heat

Next consider the recovery of heat released at the blow from the 150 ton mill mentioned above and under the same conditions of operation. This will be considered as the heat released at the blow, in cooling the contents in the blow pit at the blow from 137 to 100°C., or from 278 to 212°F. For calculation assume a blowing period of 10 minutes and 12-ton digesters, a specific heat for pulp of 0.33, specific heat of waste liquor of 0.95 and specific gravity of cooking liquor of 1.04. Upon calculation it will be found that the total heat available per blow is equivalent to 18,538,900 B.t.u. With cooling water in winter of 60°F., 24,710 gallons of warm water at 150°F. would be obtained per blow, equivalent to 2,059 gallons per ton at 150°F. In summer with warmer cooling water, the gallonage of hot water recovered would be somewhat increased. As indicated previously this heat could be recovered by direct contact heating, by installation of sprays in the vomit stack, or by indirect heating of water using a heat exchanger, suitable auxiliary equipment being also provided. Expenditures for recovery of the heat should be reasonable. The returns derived are not easily definable, yet they are real. It is well established that hot water provides more complete washing of pulps; complete elimination of waste liquor residues minimizes color reversion of unbleached and bleached stocks; waste liquor residues left in sulphite pulp definitely interfere with screening operations due to foaming, cutting down screen capacity and usually resulting in dirtier pulp, and waste liquor residues left in unbleached pulps consume very abnormal quantities of chlorine if the pulp is to be subsequently bleached. The use of hot water, as well as a material volume of cooler water, assists in the removal of pitchy and resinous constituents of the pulp which would be reflected in better paper machine operation.

### Blow Pit Construction and Washing Variables

Blow pits for sulphite operation vary in types and materials of construction. They are usually of wood construction, but may be of concrete with tile lining. They are usually rectangular, circular, or elliptical in shape. The size should be such as to hold at least two complete blows. Blow pit bottom area will vary from 55 to 65 square feet per ton of pulp. A maximum of drainage area should be provided and suitable water showers and high pressure water for sluicing should be available. The vent system may consist of a common vomit stack for each pit, or a breeching arrangement with either one large vomit stack at one end of the line or two vomit stacks, one at each end of the line. The latter breeching and vomit stack should be of sufficient size to provide suitable draft for removal of gases and vapors. There are commercial installations which have been designed to eliminate the necessity of dampers.

Modern drainage systems consist of perforated stainless steel plate, which has proven to be economical and efficient. The obsolete systems using perforated plank or tile plates are of only passing interest. Sizes of holes, and spacing in perforated plate, should be sufficient to provide ample drainage. The gage of the plate combined with suitable supporting structure should be of sufficient strength to support the head of stock and liquor to which exposed, without buckling or tearing loose lag screws. Free drainage toward the outlet should be provided under the plates to minimize stagnant liquor pools. In the author's opinion the main trouble from liming under the plates is due to stagnant liquor or slow moving liquor, permitting evaporation and concentration to an extent that $CaSO_3$ crystallizes out, $CaSO_4$ forms, gradually builds up, causes channeling, and interferes with drainage and washing efficiency. An excellent illustration of such processes is exemplified by carbonate formations commonly found in caves. A convenient perforation for blow pit plates is 3/32 inch at ½ inch centers. A suitable size metal for blow pit bottoms is 16 gage. The usual type 316 stainless steel is well adapted to this duty.

Washing stock in the blow pit involves the most

efficient use of water to remove the maximum amount of waste liquor residues in the time alloted, with a minimum of stock losses through the drainage system. Attendent with blowing pulp is the question of use or nonuse of water in the pit at the blow. There have been so many conclusions pro and con that it is the author's feeling and experience that the benefits to be derived from the use or nonuse of water in bottom of pit at the blow is dependent on a series of related factors which dictate whether or not it is of benefit in a specific mill, and precludes the possibility of generalization. A bed of water may or may not assist subsequent drainage. It is felt that the very slight cooling effect of this water does not materially lessen the usual wear of plates, or erosion of wood structure under the plates, or assist in pulp distribution on the bottom of the pit. It is the author's experience that little or no difference is noted in stock losses with or without the use of a bed of water. The washing of stock is affected by quality, volume, and distribution of the water. It is well known that wood pulp provides an excellent medium for filtering out suspended matter and some coloring constituents of water. Thus the efficiency in this respect is directly related to the quality of water used. Coloring matters from water, absorbed by pulps, may change the tint of pulp, cause subsequent color reversion of washed stock, and consume abnormal quantities of chlorine if bleached. Thus money spent on preparing good quality water is money well spent. The volume of water used is also related to the distribution of that water. Reports have been published indicating a usage of from 4000 to 12,000 gallons of wash water per ton of pulp used in blow pit washing. Wash water should be thoroughly distributed over the surface of pulp in a pit, preferably by means of showers. It should not impinge in a stream in a localized area, or against the sides of the pit with attendent possibility of boring the stock and thus cause channeling or even the possibility of floating the stock. The aim should be toward positive displacement downward over the greatest area from the top of the pit to the drain plates. As much water as possible should be used as time permits, without interfering with the digesters. Only in cases of emergency due to mechanical difficulties should pulp from digesters be blown on stock partially washed. At periods of shut downs, stock in pits should be quite thoroughly washed before an operator leaves the job. At periods of start-up, all liquids in contact with pulp should be drained and an additional wash given, as on standing there is bound to be a certain amount of diffusion of waste residues from the fibers. A thorough washing of unbleached sulphite pulp will tend to minimize subsequent pitch troubles on a paper machine. The problem of channeling in a blow pit and diffuser type washing system is well known in the industry. Therefore, an auxiliary vacuum type filter washer installed after the blow pits is a very efficient, economical piece of equipment to install. Localized unwashed areas are broken up upon removal of stock from the pit and any residual waste liquor completely removed. An 8 foot diameter by 12 foot face vacuum filter with barometric water leg is sufficient to adequately handle from 100 to 150 tons of pulp per day. This should be installed between the blow pits and the knotter screens or blending chest. A pH test of white water accompanying stock from a blow pit or off an auxiliary washer, will serve as a suitable control test for washing efficiency. Most mills sluice out stock from pits with a high pressure hose. A few mills have provided the pits with sluicing nozzles arranged around at least half the pit just above the drainage plates, and by means of high pressure water enable removing the stock efficiently in a very short period of time and at the maximum consistency the pump will take. Time saved in sluicing can be used as additional washing time; ⅜- or ½-inch nozzles, connected to a suitable header, will suffice for this work in the average pit. With a water pressure of 65 to 75 pounds gage on the header, stock can be removed from a pit in one-fourth the time necessary for ordinary sluicing. Stock losses from pits equipped with perforated plate drainage bottoms is quite nominal, usually about 35 to 50 pounds per blow, such that the cost of recovering is hardly warranted.

### Use of Vacuum Type Filter Washer

Recent advances in sulphite pulp washing as well as kraft pulp washing entails the use of the vacuum type filter washer. This practice is especially related to the recovery of waste sulphite liquor for other uses. Waste liquor as removed from the digester at best contains 10 to 12% solids. Thus excessive use of wash water in the pits or on a washer would result in waste liquor low in solids, entailing excessive evaporation costs if such procedure is contemplated. Approximately 50% of strong waste liquor can be obtained as a result of free drainage in a blow pit. Efficient kraft washing on a vacuum type filter washer would entail the use of 2.0 to 2.5 pounds of wash water per pound of pulp. Similar practice should result from sulphite washing on a vacuum washer. On the other hand, 10 to 15 pounds of water per pound of pulp are used in blow pit washing of sulphite. Thus very abnormal evaporation costs would result from recovery of concentrated waste liquor from usual sulphite operation. Vacuum washing equipment for sulphite would in all probability have to be of stainless steel construction. Thus a problem for investigation related to recovery of strong waste liquors from sulphite is cooking with the use of greater quantities of waste liquors in the digesters and determination of the effect on pulp quality. Such research should be repeated in the light of modern sulphite practice.

### Unbleached Sulphite Blending Chest

A very efficient adjunct to sulphite pulp manufacture entails the installation and use of a blending chest primarily to assist in the production of a uniform grade of stock. It is well known in practice that variations in wood quality, wood moisture content, cooking acid, and cooking technique are such that in normal production pulp from the digesters will vary somewhat in quality. Especially is this so in mills where the digesters are not equipped with circulation systems. In mills with digesters equipped with circulation systems, where, for instance, the aim is to manufacture a 5% chlorine demand pulp, it would be reasonable to expect the chlorine demand to vary from 4.5 to 5.5% from cook to cook. In mills with digesters not equipped with circulation systems greater fluctuation might be expected in the chlorine demand of pulp. Such variations are likewise reflected in the physical and chemical qualities of pulp. A blending tank or system, entailing provision for mixing at least the major portion of three cooks, will tend to offset these variations and yield a product of quite uniform quality for subsequent disposition thus simplifying bleaching practice to cook book procedure and permitting greater assurance to the paper-

maker of uniform quality paper, provided that other handling is carefully controlled.

### Knotter Screens

The first step in cleaning the product involves the removal of knots, uncooked chips, and extremely heavy or sizeable dirt. Sulphite mills, in general, are equipped with one of two types of knotter screens, centrifugal type screens or flat type screens. The latter may be of normal vibration type or of a later type involving high frequency vibrations. The aim, of course, is to remove the maximum of this type of contamination with the least outlay for space, equipment, buildings, power, maintenance, and labor. Knots and such materials are removed from considerable tonnage of sulphite pulp by use of centrifugal type screens with perforated plates. A common model of this type screen containing screen plates with ¼-inch holes at ⅜ inch centers will handle 40 to 60 tons of pulp per day at 0.4% consistency. The horsepower, space required, maintenance, and labor are usually quite low for this equipment. One possible disadvantage, especially in the manufacture of pulps for fine papers, is the somewhat excessive agitation, tending to brush apart shives and knots. Such screens should be regularly examined for possible damage to perforated plates. The wastage of fiber with the knots from this type of screen is quite low. The second type of knotter is the flat knotter screen which finds greater favor in those mills producing pulp for the market. This type of screen may require slightly more space but the horsepower, maintenance, and labor requirements are low. The vat construction and drive may be of one of a number of designs. The screen plates may be of either bronze, chromium plated steel, or chrome nickel steel construction. They are usually provided with a scraper arrangement to remove the knots from tail end of screens. The capacity of the screens is dependent, of course, on stock consistency, screen plate cut size, and the frequency and amplitude of the vibrating mechanism. The usual screen plate cut size will vary from 0.025 to 0.040 inches wide, depending on the extent of cleaning desired in this operation. Production from this type knotter screen will usually vary from 2.5 to 4.0 tons per plate per day. A recent development in knotter screens involves a flat type screen equipped with magnetic vibrator which has principally been adapted from the mining industry. This type of equipment is receiving favor in the industry as result of high capacity, low power consumption, low maintenance, and clean pulp. Rejects from knotter screens are treated in various manners, from discarding to blending with tailings from the fine screens, with subsequent refining and use for various types of wrapper or board stock. Careful consideration should be given to knotter rejects before they are discarded. Knots can be readily fiberized in a hammermill type of crusher and when blended and refined together with fine screen tailings find a use at slight expense, or even at some profit for the mill.

### Rifflers and Fine Screens

The next operation in cleaning unbleached sulphite pulp usually involves either fine screening in centrifugal type screens, a combination riffling and flat screen fine screening, or just flat screen fine screening. The objective is a clean pulp free of shives and fine organic and inorganic dirt, accomplished with a minimum power consumption, equipment layout, buildings, and low maintenance and labor cost.

A considerable tonnage of sulphite pulp is screened merely by the use of the centrifugal type screens equipped with perforated plate. Such equipment permits small equipment space for a reasonable tonnage. Maintenance and labor costs are reasonably low. There is a reasonable power consumption in pumping stock and actuating screens. Due to the somewhat turbulent action there is a slight breaking up of shives and dirt. A common model of this type screen with plates containing 0.050-inch holes spaced on ⅛ inch centers will handle 20 to 25 tons of pulp per day.

As a means of cleaning pulp, rifflers have been the subject of much discussion. The one questionable feature is space required for handling reasonable tonnages. The construction and operating characteristics of rifflers are quite diversified. Rifflers are operated at shallow depth to reasonable depth, from approximately 6 inches to 2 feet. Velocities vary from approximately 0.5 to 4 feet per second. Consistency varies from approximately 0.30% to 1.0%. Unobstructed flow or interrupted flow by baffles are both widely practiced. Rifflers floors may be plain wood or concrete, or may be covered by long nap cotton felts, or even used woolen felts from paper or pulp machines. Baffles may be provided for a short section at the head of a riffle. Extent of cleanliness accomplished by riffling largely dictates the conditions of construction and operation. A rather efficient riffler arrangement for 100 tons of unbleached pulp per day could consist of four rifflers each 8 feet wide and 75 feet long, equivalent to 24 square feet of area per ton of pulp per day. Operation would be carried out at 0.30 to 0.35% consistency, depth of flow 6 to 8 inches, velocity of flow approximately 1 foot per second. The base of the riffler may or may not be supplied with half round or straight baffles, moderately spaced on long nap cotton or woolen felt. Baffles tend to interfere with washing operations. Such rifflers should be washed at least once every 24 hours. In general in sulphite pulp operation it is the author's opinion that rifflers, if properly designed and operated to best suit local conditions, are an efficient and economical means of assisting in the cleaning of unbleached sulphite pulp. Tests have indicated that for reasonable flow depths, long nap cotton felts are as efficient as baffles in dirt removal. The distance apart materially affects efficiency of baffles. Baffles slanted against the stream are usually more efficient than baffles slanted with the stream.

Probably the greatest tonnage of unbleached sulphite pulp is cleaned by means of flat screens. Flat screens in general consist of a number of types of vat constructions, vibrating mechanisms, screen plates, and arrangement of vats in a row. The tendency is toward simplification, facilitating efficient operation and low operating and maintenance cost. The old wooden vat construction is being replaced by metal, eliminating to a great extent erosion of wood and simplifying screen plate replacement. Considerable thought has been given to the hydraulic principles involved in screening to increase production and provide a cleaner product. The old bronze screen plates are rapidly being replaced by chromium plated bronze plates and chrome nickel steel plates. Efficiency of flat screen cleaning is dependent largely upon pulp consistency, method of approach of pulp slurry to the screen row, cleanliness of screen plates, slot size of screen plates, frequency and amplitude of vibrating mechanism. A wide variety of operating conditions are possible, dependent on the requirements and desires of management, although there are

definite limitations of equipment for quality desired and those limitations should not be exceeded unless it is recognized that poorer quality will result. In the past few years, screen plate materials of construction and type of construction has undergone considerable change. The old bronze plates with the tendency toward slot wear and size change necessitating recutting are being replaced with chromium plated bronze plates and chrome nickel steel plates. Although the first cost is considerably higher the ultimate unit cost is much lower than bronze. As a result of definiteness and stability of slot size, normal production of regular quality is constantly maintained, provided other operating factors are properly supervised. The author would recommend that slot sizes of new and used plates be checked completely with a filar micrometer, a measuring device adapted to the common microscope. Standard thickness gages can be used for cursory checks but for definiteness and accuracy the filar micrometer is recommended. Studies should be made for each mill as regards proper frequency and amplitude of the vibrating mechanism, to insure maximum production of quality pulp in a given mill. Likewise studies should be made of hydraulic flow at the screen vat discharge. Needless to say screen plates and vats should be regularly and completely cleaned at required intervals. Various chemicals are available for periodic slime cleaning, such as chlorinated phenols, and if a bleach plant is operated in conjunction with the mill a small dosage of bleach liquor in the white water run over the screens just after shut down or prior to start up is very beneficial. Cleanliness of screen plate slots is very essential to efficient operation and life of plates. Tests in a rigid vat have indicated deflections of clean plates at middle position of 0.005 inch, compared to deflection of dirty plates of 0.050 inch. Deflection of the bar under these conditions varied from 0.001 to 0.004 inch. In the case of old wood vats the deflection of plate varied from 0.002 to 0.010 inch and bar from 0.001 to 0.002 inch. Such cold working should materially affect the life of the plates. For high quality, clean unbleached sulphide pulp, screen plate cut sizes will vary from 0.006 cut on the tailings line to 0.009 to 0.010 cut plates in the primary screens. Under such an arrangement an average production rate of 0.40 to 0.45 tons per plate per day can be expected. Naturally a greater production of inferior quality can be expected of coarser cut plates, provided other operating factors are properly handled. Considerable thought is being given to the use of short screen lines versus longer screen lines. There may be advantages in either system in a given plant. The author feels that best operation can be accomplished by proper attention to the number of related variables attendant with flat screen operation. Flat screen operation involves rather low power requirements. For operation of the flat screens themselves a reasonable power figure would be 0.6 installed horsepower per ton of pulp.

The subsequent operation in unbleached sulphite pulp manufacture involves thickening by means of conventional deckers preparatory to passing over wet machines or pulp drying machines of one type or another, so as to prepare for storage or shipment.

### Control

Control of operations in riffling and screening contribute largely to efficiency and maximum production of high quality product. The entire riffling and screening operation is dependent primarily on uniform consistency. Any variation is directly related to a number of other factors which in total directly affect the quality and quantity of pulp cleaned. Photoelectric indicating and control devices have been in operation now for a number of years to accurately control consistence and flow. A submerged type photo cell arrangement, with suitable light source and sensitive element, is operating successfully. A photo cell may actuate a water valve supplying dilution water to stock pumped to knotter screen head boxes, thereby regulating consistence and flow to the rifflers and screens. Such an adaptation is very accurate up to 0.5% consistency and reasonably accurate up to 0.75% consistency. Freedom of flow between the light source and sensitive element must be maintained.

### Power Requirements

Power requirements for riffling and flat screening unbleached sulphite pulp are quite reasonable. In the case of centrifugal screens the power requirement is somewhat higher. A reasonable installed power figure for a system including knotter screens, riffles, flat screen, deckers, and white water pumping, operation in an unbleached sulphite mill would be 2.75 installed horsepower per ton. If blow pit operation is included, the power requirement for washing and cleaning would be approximately 3.00 installed horsepower per ton.

### General

Washing and cleaning operations in an unbleached sulphite mill are of major importance to the production of a uniform high quality product. Especially is it essential that this type equipment and operation be maintained at or below rated capacity. It should be readily recognized that an inferior product will result from excessive production through these departments, which will primarily result in dirty pulp, or if bleached, in abnormal chlorine demands, pitch troubles, and a number of other trying problems. In laying out new or modernizing old washing and cleaning departments, adequate capacity should be installed and space provided as necessary. It should be recognized that washing and screen department retirement, maintenance and operation costs represents a small percentage of the cost of pulp production, yet they can affect the final quality all out of proportion to these values. A critical analysis of washing and screening equipment and adequate control of operation may save many times the effort expended and insure a uniform quality product.

## New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

Paul E. Bowman, Pulp Mill Superintendent, West Virginia Pulp & Paper Co., Luke, Maryland, a 1922 graduate of Pennsylvania State College.

Sydney O. Edge, Research and Chief Chemist, John Wild & Sons Ltd., Broad Dumers Works, Radcliffe, Nr. Manchester, England, a 1940 graduate of Salford Royal Technology College.

Donald M. Ferguson, Chemist, St. Regis Paper Co., Norfolk, New York, a 1940 graduate of the New York State College of Forestry.

Georges Franck, General Manager, Cartonneries de la Rochette, Paris, France, a 1921 graduate of Ecole Des Travaux Publics, Paris.

William Y. Irwin, Development Department, Congoleum-Nairn, Inc., Kearny, New Jersey, a 1921 graduate of Swarthmore College.

# Peroxide Bleaching of Mechanical Pulps*

## Influence of Bacteria and Enzymes—Part II

By R. T. Mills[1], W. S. Hinegardner[1], and W. O. Stauffer[2]


### Abstract

*Part I of this paper (8) showed a relationship between the bacteria count of groundwood and the stability of peroxide bleaching solutions. It included a short review of the enzymes generated in the metabolism of bacteria, with special emphasis on the enzyme catalase.*

*Part II of this paper reviews briefly some of the literature on the destructive action of heat, oxidizing agents, and the halogens on enzymes. It also describes the results of an investigation made to confirm this destructive action of chlorine, sodium hypochlorite, and heat on the enzyme catalase formed by the growth of bacteria in groundwood systems.*

*Part II of this paper describes also a simple method for measuring the catalase activity of groundwood pulps and shows a correlation between catalase activity and bleachability with peroxide.*

*The data further show that the peroxide process for bleaching groundwood will tolerate appreciable quantities of catalase in the pulp before a loss in bleaching efficiency occurs.*

*When the catalase activity in groundwoods is the same, groundwood with a low unbleached brightness (e.g., brightness of 56 to 57) shows a higher brightness gain with the same quantity of chemicals than an unbleached pulp with a high brightness (e.g., brightness of 62).*


In the early research and development work on the peroxide process for bleaching groundwood, the possible presence of excessive quantities of catalase in aged pulps was recognized and, consequently, fresh pulps were considered preferable for carrying out laboratory investigations and mill trials. Subsequently, it became apparent that the bleaching results were uniformly better in mills practicing good slime control, indicating that the bacteria and enzymes in groundwood exerted an adverse effect on the peroxide bleaching treatment.

Part I of this paper gave a review of the formation and properties of enzymes, particularly the enzyme catalase. It also described the effect of catalase generated by bacteria in groundwood systems on the decomposition of peroxide bleaching solutions.

The destructive action of heat *(4, 7)*, oxidizing agents *(4)*, and the halogens, chlorine and bromine *(3, 4)* on enzymes, particularly on catalase, has been recognized for many years. An evaluation of catalase-destroying treatments was made to confirm the applicability of these earlier findings to the destruction and control of catalase in groundwood systems.

### Method Used for Determining Catalase Activity

To facilitate the study of the influence of catalase on peroxide bleaching of groundwood, it was desirable to have a simple method for determining the catalase activity of groundwood slurries. Modifications of two general methods for determining catalase activity have been used by those who have investigated the products of the metabolism of bacteria *(1, 2, 5, 6, 11)*. One general method consists of adding hydrogen peroxide to catalase solutions under controlled conditions of pH, temperature, and time. The rate at which the catalase decomposes the peroxide into oxygen and water is determined by titrating samples of the catalase-peroxide solutions for residual peroxide at definite time intervals. This method is not suitable for use with groundwood slurries because of the peroxide consumption of the pulp.

The second method consists of adding hydrogen peroxide to catalase solutions at a controlled pH and temperature and measuring the oxygen evolved from the solution over a period of time. The following modification of this method was found suitable for use on groundwood slurries.

#### Equipment

Figure 1 shows a drawing of the equipment used in this test. A is a 500 ml. large mouth bottle in which the groundwood slurry and peroxide solution is placed for the gas evolution test. B is a 500 ml. large mouth glass bottle used as a water reservoir for tube C. C is a 25 ml. tube calibrated in cc. in which the gas evolved in bottle A is collected. D and E are capillary tubes used to connect bottle A with gas collecting tube C. F is a rubber tube used to connect D and E. G is a tight-fitting rubber stopper. H is a loose-fitting rubber stopper with a large hole in which tube C rests during the gas collection period. I and J are water baths used to control the temperature in bottle A within ±0.4°F. of the temperature selected for the catalase activity test. $T_1$, $T_2$ and $T_3$ are thermometers used to control the temperature in bottle A.

#### Procedure

A 225 gram sample of 5% pulp slurry to be tested for catalase activity is placed in bottle A and cooled to the temperature at which the catalase activity is to be determined (usually 70 to 75°F.).

A solution of 235 ml. of distilled water containing 25 ml. of 1% $H_2O_2$ solution (17.5 ml. of 100 volume

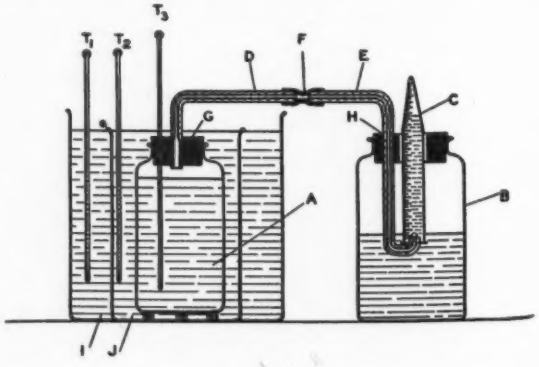


FIG. 1
Apparatus for Measuring Catalase Activity of Groundwood Slurries

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

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$H_2O_2$ diluted to 500 ml.) is placed in a beaker and cooled to the same temperature as the pulp.

Tube C is filled with water at room temperature and placed in bottle B as shown in Fig. 1, but capillary E is not as yet connected to D.

After the groundwood slurry and the dilute peroxide solution have reached the desired temperature for the test they are then mixed together thoroughly and rapidly in bottle A.

Stopper G, containing thermometer $T_3$ and capillary D, is placed into the top of bottle A. Capillary D is connected to capillary E with rubber tube F in such a manner that the water is expelled from capillary E to the tip of the capillary tubing located inside calibrated tube C.

The selected temperature is maintained within ±0.4°F. in Bottle A and bath J during the test. This temperature may be 70 to 75°F., depending upon which temperature is closer to room temperature.

The volume of gas collected in tube C over definite periods of time is recorded. The volume of oxygen evolved from a groundwood-peroxide slurry in bottle A over definite periods of time is considered indicative of the catalase activity of that sample of groundwood.

Unless stated otherwise, the pH of the groundwood slurry during the catalase activity test, as reported in this paper, was between 6.0 and 6.5.

### Bacteria Count of the Pulp

The procedure used to determine the bacteria count of the pulp is as follows:

The consistency of the groundwood slush is determined and a quantity taken which contains 0.25 gram moisture-free pulp. This groundwood sample is diluted to 500 ml. with sterile water and mixed thoroughly. A 10 ml. sample of this pulp suspension is diluted to 100 ml. with sterile water and mixed thoroughly. Two or more 0.1 ml. and 1.0 ml. samples of this last suspension are mixed with 10 ml. of nutrient agar and placed in sterile Petri dishes and incubated at 86°F. (30°C.). The bacteria colonies are counted after 48 hours and reported as bacteria/gram of moisture-free pulp.

### Correlation Between Bacteria Count and Catalase Activity

For the purpose of this investigation, it was desirable to study pulp samples having a wide range of catalase concentrations. Freshly ground pulp was used for the low bacteria counts and the low catalase concentrations. For the higher bacteria counts and catalase concentrations the pulp was allowed to age at room temperature for 1 to 3 days; this aging permitted the bacteria to multiply and to produce some catalase. For this reason some of the bacteria counts and catalase concentrations reported in this paper are higher than are normally encountered in mill practice. These high catalase concentrations may be encountered in stored laps of groundwood and are therefore significant in this investigation.

When a freshly ground pulp is allowed to age the bacteria count starts to increase in the normal manner with an accompanying increase in the catalase concentration. The relation between the bacteria count and catalase activity during this period is shown for a typical pulp in Fig. 2.

There are several factors which affect this relationship and which tend to make bacteria counts an unreliable index of catalase activity. Chief among these are the following:

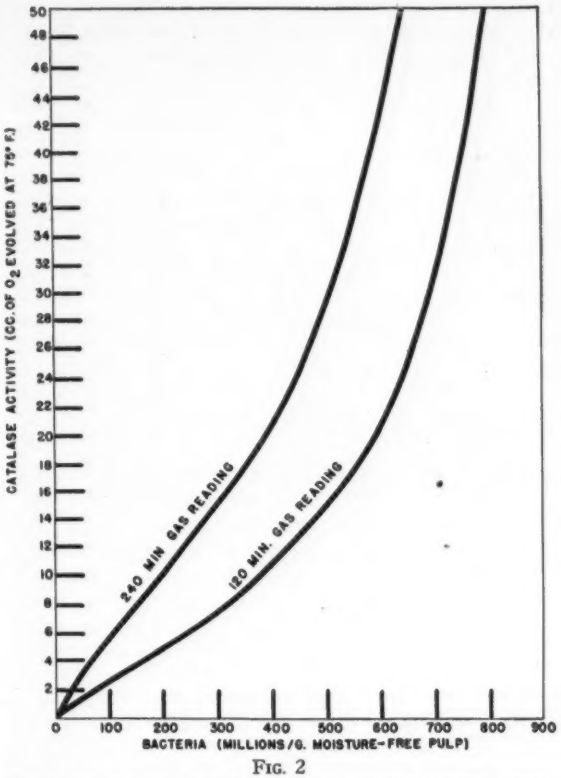


FIG. 2

Correlation Between Bacteria Counts and Catalase Activities During the Period of Bacteria Growth

a. Because of exhaustion of the food supply, or possibly because of self-poisoning byproducts of their metabolism, most bacteria will eventually stop growing and will finally die, but the catalase may remain in the pulp for some time.

b. The bacterial flora may vary from mill to mill, and with season of the year in any one mill, with a probable variation in catalase production *(2, 6, 10)*.

For these reasons the relation shown in Fig. 2 is valid only for the particular pulp tested and then only during the period favorable to the growth of the bacteria.

### Correlation Between Catalase Activity and Bleachability

The catalase activity test previously described provides a reliable method of determining whether a pulp contains enough catalase to interfere with the peroxide bleaching process. As compared with bacteria counts, this test has the further advantage that no specialized facilities or techniques are required.

The data accumulated on a number of samples of groundwood made from spruce and balsam wood mixtures from one mill are summarized in Fig. 3 where bleachability is plotted against catalase activity.

The graph shows shaded areas between good to fair bleaching, fair to poor bleaching, and poor to very poor bleaching. These indicate an overlapping of bleachability in these areas which results principally from the day to day variation in pulp. Apparently the bleaching of groundwood is affected less by a reduction in peroxide in some cases than in others. This difference is related to some extent to the unbleached brightness of the pulp. The pulps used in this study varied in unbleached brightness from a low of 56 to a high of 64. When bleaching

with 1.8% sodium peroxide on the air-dry weight of the pulp at 5% consistency with a low catalase activity, gains of 12 to 14 G.E. brightness points were obtained when starting at a brightness of 56 to 57, whereas gains of 9.5 to 11.5 were obtained when starting at 62 to 64 with other low catalase activity groundwood samples.

For practical purposes the oxygen evolved in 120 minutes may be used to indicate the catalase activity. Figure 3 shows that if the gas evolved under the conditions of test is about 2 cc. or less, the bleaching will not be affected appreciably by catalase. If the gas evolution is between 5 and 7 cc., enough peroxide will be lost so that bleaching is likely to be only fair. Gas evolutions between 2 and 5 cc. are in the overlapping area and bleaching may or may not be slightly affected, depending on the individual pulp. Gas evolutions in the range of 10 cc. or higher show a high catalase activity which will result in poor bleaching.

### Effect of Temperature on the Catalase Normally Generated by Bacteria in Groundwood Slurries

Figure 4 shows the effect of different storage temperatures and periods of time on the catalase activity of groundwood. A very rapid increase in catalase activity takes place when the pulp is stored at 90°F., which is the approximate temperature most favorable to the rapid growth of many nonpathogenic bacteria. These curves indicate the beneficial effect of having the temperature of the groundwood stock above 112°F. and also show that rapid destruction of catalase takes place at temperatures of 150 to 160°F.

Figure 5 shows the change in catalase activity when freshly ground pulp is stored at various temperatures between 70 and 160°F. for 1 hour before readjusting the temperature to approximately 70°F. (21°C.) for a 60 minute catalase activity determination. This curve again shows an increase in catalase activity occurring between 70 and 110°F with a peak at approximately 90°F. because of the formation of higher concentrations of enzymes by the bacteria during a period of growth. It also reveals a rapid decrease in activity occurring as the temperature is raised from 110-115°F. to 160°F. because of the retarding and, finally, killing effect of higher temperatures on bacteria and also due to the destruction of the catalase by heat. The catalase activity of the groundwoods tested in this investigation was entirely destroyed by a 1 hour storage at 160°F.

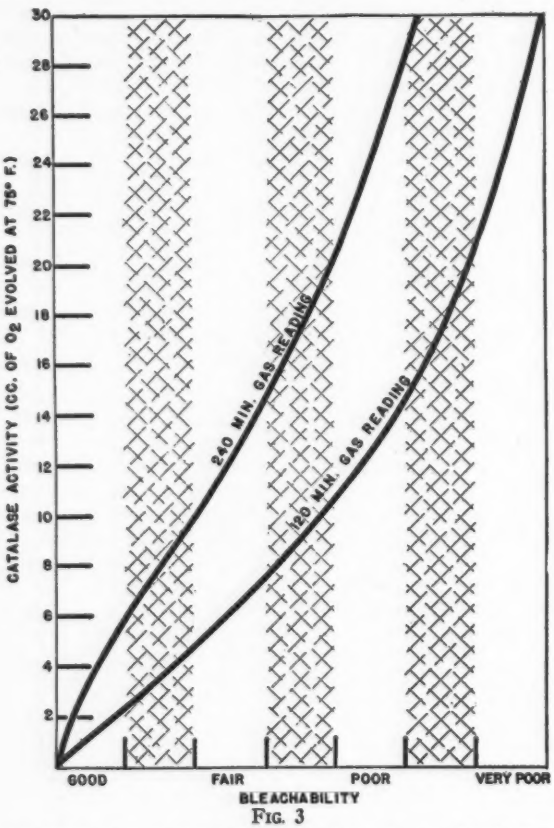


FIG. 3

Correlation Between the Catalase Activity and the Bleachability of Groundwood

### Effect of Chlorine and Sodium Hypochlorite on the Catalase Activity of Groundwood Pulps

Groundwood samples with low and high catalase activities were treated at various pH's with sodium hypochlorite and with chlorine water at a temperature of approximately 80°F. for 30 minutes at 5% consistency. Samples of the treated stock were tested for bacteria count and catalase activity. Other samples were adjusted to various pH's with dilute sulphuric acid to determine the effect of pH alone on catalase activity.

Because of the effect of pH during the gas test on catalase activity the pH of some samples treated with hypochlorite and chlorine were readjusted to approximately 6.5 before making the catalase activity test. The results of this investigation are shown in Tables I, II, and III.

TABLE I.—SODIUM HYPOCHLORITE TREATMENT

0.25% Available Chlorine on Moisture-Free Weight of Pulp

| G.W. Sample No. | pH in Treatment | Bacteria Count * Before Treat. | Bacteria Count * After Treat. | pH in Catalase Test | Catalase Activity cc. $O_2$ in 120 min. Before Treat. | Catalase Activity cc. $O_2$ in 120 min. After Treat. |
|---|---|---|---|---|---|---|
| 1 | 8.5 | B | A | 7.2 | 3.7 | 0.7 |
| 2 | 8.5 | C | B | 7.2 | 9.7 | 4.9 |
| 3 | 8.5 | C | B | 7.2 | 9.4 | 6.1 |
| 4 | 9.0 | D | B | 6.3 | 11.5 | 4.9 |
| 1 | 7.0 | B | A | 6.3 | 3.7 | 0.6 |
| 2 | 7.0 | C | A | 6.3 | 9.7 | 2.2 |
| 3 | 7.0 | C | A | 6.3 | 9.4 | 0.5 |
| 1 | 3.0 | B | A | 2.9 | 3.7 | 0.6 |
| 2 | 3.0 | C | A | 2.9 | 9.7 | 0.0 |
| 3 | 3.0 | C | A | 2.9 | 9.4 | 0.5 |
| 4 | 3.0 | D | A | 5.7 | 11.5 | 0.0 |

* Bacteria count:
A = 0-1,000,000
B = 1,000,000-100,000,000
C = 100,000,000-200,000,000
D = 200,000,000-400,000,000

TABLE II.—CHLORINE TREATMENT

0.19% Available Chlorine on Moisture-Free Weight of Pulp, Added as Chlorine Water

| G.W. Sample No. | pH in Treatment | Bacteria Count * Before Treat. | Bacteria Count * After Treat. | pH in Catalase Test | Catalase Activity cc. $O_2$ in 120 min. Before Treat. | Catalase Activity cc. $O_2$ in 120 min. After Treat. |
|---|---|---|---|---|---|---|
| 1 | 3.3 | B | A | 4.6 | 3.7 | 0.0 |
| 2 | 3.3 | C | A | 4.6 | 9.7 | 0.0 |
| 3 | 3.3 | C | A | 4.6 | 9.4 | 1.0 |
| 4 | 3.3 | D | A | 5.8 | 11.5 | 0.0 |

Note: 0.19% $Cl_2$ on the pulp is equivalent to 100 p.p.m. on basis of the water at 5% consistency.

* Bacteria count:
A = 0-1,000,000
B = 1,000,000-100,000,000
C = 100,000,000-200,000,000
D = 200,000,000-400,000,000

TABLE III.—EFFECT OF pH ON THE EVOLUTION OF OXYGEN IN THE CATALASE TEST

| pH | 2.5 | 3.3 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 |
|---|---|---|---|---|---|---|---|---|
| cc. $O_2$ Evolved (120 min.) | 1.9 | 2.3 | 3.1 | 4.7 | 5.8 | 10.3 | 12.0 | 12.3 |

The results given in Tables I and II show that hypochlorite and chlorine are effective in the destruction of catalase in groundwood pulps, especially when the slurry during the treatment period is at a pH of

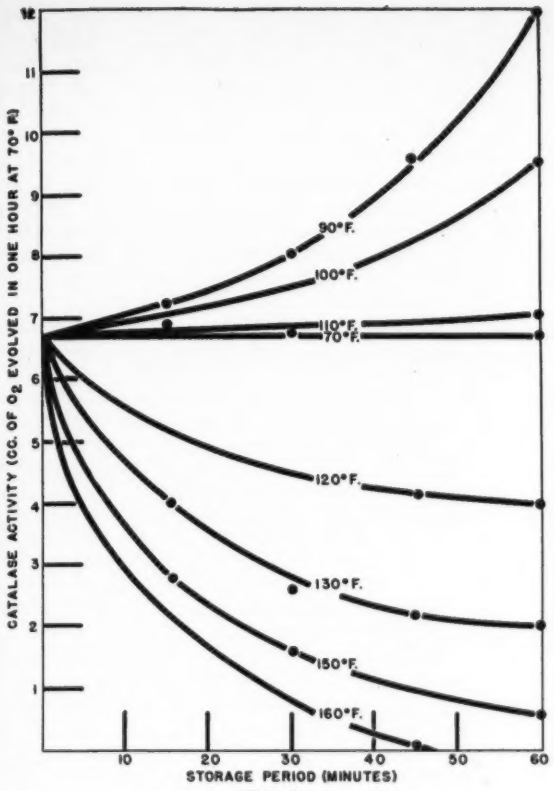


FIG. 4

Effect of Various Storage Periods and Temperatures on the Catalase Activity of Groundwood

approximately 7.0 or lower. At a pH of 8.5 only part of the catalase activity was destroyed in 30 minutes at 80 to 85°F. This treatment at the correct pH, time, and temperature would improve the peroxide bleaching results on stored groundwood laps or slurries showing abnormally high catalase activity. The quantities of chlorine and hypochlorite shown in these tests may possibly be reduced in mill practice by applying the required type of chemical to the white water, with the objective of preventing the growth of bacteria and generation of catalase.

High catalase activity may be detected in the peroxide bleaching operation by a rapid decrease in residual peroxide or it may be indicated by the pulp rising rapidly to the surface of the slurry during a bleach at low consistency. High catalase activity may be confirmed by the test described in this paper and a chlorine type of treatment may then be used to improve the peroxide bleaching results. It should be pointed out, however, that groundwood pulps will drop in brightness during an aging period and the final bleached brightness may not be as high as that of freshly ground pulp bleached with peroxide.

It has previously been shown (Fig. 3) that high catalase activity adversely affects bleachability and it is of interest to know whether bleachability is restored if catalase is destroyed by one of the treatments discussed above. Bleaching tests were made on four portions of a pulp sample as follows: a. freshly ground—low catalase; b. freshly ground and treated with 0.19%$Cl_2$ on pulp (100 p.p.m. on the water at 5% consistency)—low catalase; c. aged 1 day—high catalase; and d. aged 1 day and then treated with $Cl_2$ as in (b)—low catalase.

The results obtained by this procedure on four samples of pulp are given in Table IV. It will be noted that (1) the addition of chlorine in the amount used has no significant effect on the original bleachability, (2) aging this same pulp for 1 day causes a reduction in bleachability of 2 to 3 points, and (3) treatment of the day-old pulp with chlorine restores the bleachability to substantially the original level.

TABLE IV.—THE EFFECT OF A CHLORINE PRETREATMENT ON THE CATALASE ACTIVITY, PEROXIDE STABILITY, AND PEROXIDE BLEACHABILITY OF GROUNDWOOD

| Test No. | Chemical Treatment (% $Cl_2$ on weight of pulp added as $Cl_2 + H_2O$) | Catalase Activity | Residual Peroxide After Bl.,* % | Handsheet Brightness (G. E. Units) Unbl. | Bl.** | Br. Gain |
|---|---|---|---|---|---|---|
| 1 | None | low | 15.2 | 56.8 | 70.2 | 13.4 |
| 2 | No. 1 + 0.19% $Cl_2$ | low | 20.0 | | 70.1 | 13.3 |
| 3 | No. 1 aged 1 day | high | 3.2 | | 68.5 | 11.7 |
| 4 | No. 3 + 0.19% $Cl_2$ | low | 18.4 | | 70.9 | 14.1 |
| 5 | None | low | 15.7 | 62.4 | 72.7 | 10.3 |
| 6 | No. 5 + 0.19% $Cl_2$ | low | 21.2 | | 73.2 | 10.8 |
| 7 | No. 5 aged 1 day | high | 3.1 | | 69.2 | 6.8 |
| 8 | No. 7 + 0.19% $Cl_2$ | low | 27.6 | | 71.9 | 9.5 |
| 9 | None | low | 22.1 | 62.0 | 73.6 | 11.6 |
| 10 | No. 9 + 0.19% $Cl_2$ | low | 23.7 | | 73.2 | 11.2 |
| 11 | No. 9 aged 1 day | high | 7.9 | | 71.6 | 9.6 |
| 12 | No. 11 + 0.19% $Cl_2$ | low | 31.0 | | 72.5 | 10.5 |
| 13 | None | low | 14.2 | 62.0 | 72.4 | 10.4 |
| 14 | No. 13 + 0.19% $Cl_2$ | low | 23.6 | | 73.3 | 11.3 |
| 15 | No. 13 aged 1 day | high | 0.0 | | 69.8 | 7.8 |
| 16 | No. 15 + 0.19% $Cl_2$ | low | 22.0 | | 71.9 | 9.9 |

* Low residual peroxide indicates a high catalase activity in the groundwood.

** All samples bleached at 5% consistency with 1.8% sodium peroxide on the "air dry" weight of pulp under conditions normally used to bleach groundwood samples in the laboratory (9).

## Discussion

This paper discusses pulp conditions which are believed to be very abnormal for fresh pulps in most groundwood mills throughout the country. The time required for the pulp to reach a high catalase activity is dependent upon conditions in the mill which may or may not be favorable for bacteria inoculation and growth; namely, size of the white water system

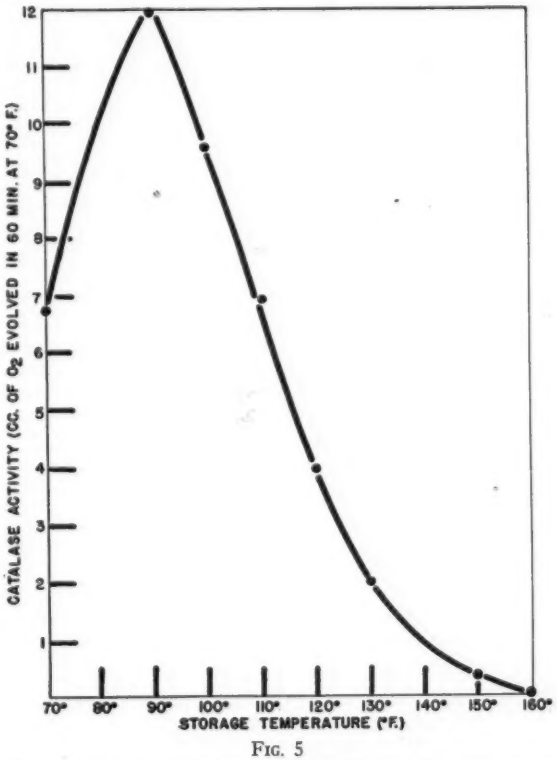


FIG. 5

Effect of a 1 Hour Storage Period at Various Temperatures on the Catalase Activity of Groundwood

(white water storage), storage of slush after grinding, temperature of the water and slush systems, and most important of all, the efficiency of the slime control system. The catalase activity which exists in fresh pulps in mills having good slime control systems has been observed to be at such a low level as to have no significant effect on the peroxide bleaching process. It is therefore expected that no difficulty will be encountered when bleaching a fresh normal groundwood pulp with peroxides if a mill is operating an efficient slime control system.

### Literature References

In addition to the references cited in Part I of this paper *(8)* the following references are also listed.


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## Printing Ink Subject Delaware Valley Meeting

Mr. George Cramer of the Sinclair and Valentine Company, New York, N. Y. spoke on the problems involving ink in the printing of paper at the May 3rd meeting of the TAPPI Delaware Valley Section which was held at the Engineers Club in Philadelphia.

In practically all printing problems, an effort is made to correct or improve the printing qualities of a paper by the adjustment of the ink. This situation is because the properties of paper, as such, can not be altered and the best usage must be made of the paper stock at hand. For the ink manufacturer it imposes the problem of maintaining formulas which will meet practically any condition which may be encountered.

In addition to the three basic types of printing processes: relief, litho, and gravure, consideration must be given to such factors as the type of printing equipment, the speed of the press, the paper, and the number of colors used.

The ink manufacturer is mostly concerned with the tack properties of his product and the relationship of these properties to the paper. In general, it has been found that coated papers having a pick of over 5 and preferably 8 to 9 usually cause the least difficulty. Over 9 is usually too hard and may cause drying trouble. Uncoated papers do not present this problem.

If the paper is not sufficiently smooth, it is necessary to increase the printing pressure and this often causes undue plate wear.

As far as the ink is concerned, drying is a most important problem with chalking, caused by absorption of the vehicle by the sheet or coating, being the opposite phase of this problem. This latter condition may be overcome by overvarnishing but this increases costs.

Ink is adjusted as to tack depending on the print job, the process used, the speed of the press, and the number of colors used, to mention a few factors. Offset inks are very tacky to resist emulsification, letter press inks intermediate with sufficient tack to give good register and not lift the sheet or coating, while gravure inks are very thin so that the ink will leave the impressions readily. All ink formulations involve adjusting the combinations which will give the effects desired by the printer.

Among those present were: Edw. J. Albert, Raymond J. Appinall, J. H. Arthur, E. J. Barber, Arnold J. Barea, Stanley L. Basche, E. Raymond Baublitz, J. M. Bernstein, R. T. Bingham, A. M. L. Bixler, Walter Bossert, C. L. Brickman, H. C. Brill, S. G. Briscoe, Philip G. Bruno, J. W. Burke, Wm. J. Burke, Chas. W. Carr Jr., Cornelium F. Carr, John Carson, Dr. George Cramer, C. M. Connor, J. A. Cullerton, C. A. Cuscek, J. D. Davis, Ed DeLauter, J. C. Dieffenderfer, J. Dieterle, W. P. Dohne, J. E. Doyle, J. R. Dufford, G. J. Eberz, Kephart Emenheiser, J. S. Evans, J. Fachet, J. A. Foreman, Maurice L. Gallagher, H. L. Geer, Fred A. Goetz, J. M. Graham, L. V. Hans, Henry Harmren, A. M. Hartley, H. F. Hoffmann, E. Horsey, Harry Hulmes, Dr. Werner Kaufmann, F. C. Keresztury, J. G. Little, J. Macadam, S. McCabe, Louise McGrath, M. C. Moore, W. B. Morehouse, P. M. Neumann, J. A. Paciello, Emil R. Padario, George Preisig, D. Price, Harold Pugh, W. H. Puring, M. D. Reuben, C. H. Ross, Chas. Schubert, J. Carl Schmidt, George R. Schultz, Edw. A. Shallcross, Sr., Robt. H. Simmons, Mildred Simon, Lars H. Sjodahl, Howard H. Street, Warren A. Steele, Lionel M. Sutherland, George M. Suydam, Jack Ward, Kingdon R. Watt, John P. Weidner, R. Wiggins, Ray Wilcox, Wm. R. Willets, A. C. Zettlemayer.

## Kalamazoo TAPPI Discusses Stream Improvement

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met on Thursday evening, May 2nd at 6:30 p. m. at the Columbia Hotel.

A report on the tests being made on pollution of the Kalamazoo river was heard by 40 members of the Kalamazoo Valley Section. The speaker was P. F. Morgan of the National Council for Stream Improvement, who now has headquarters at Kalamazoo College where he heads the Mellon Institute's research in this area on stream control. Morgan reported that he has been sampling waters of the Kalamazoo river and found that it does not show pollution until after passing Comstock into the city area where paper mills are located. He expects to continue taking samples of the river between Comstock and Otsego during the summer. The chief goal of the Mellon Institute's research, he told the gathering, is to find some way of treating the wastes from de-inking processes used in the paper mills.

Those present included: Paul Applegate, Ralph Atkins, Clifford Beebe, P. W. Bartholomew, H. Bradford, Art Coffin, C. T. Colgren, C. W. Cassell W. G. Curry, A. W. Cole, G. F. DesAutels, Art Dean, M. S. Fogerty, M. Galbraith, Charles E. Gardner, R. C. Germanson, George D. Gerpheide, J. J. Harrison, Herb Hamilton, F. R. Hamilton, W. F. Hathaway, Carl Hoelderle, Stephen Kukolich, W. A. Kirkpatrick, J. R. King, Frank Libby, D. Militzer, C. E. Mueller, L. Mimms, P. F. Morgan, Art. Moeslein, H. Nendorf, H. G. Potts, R. W. Polderman, Howard Parker, H. Reeves, Jr., A. L. Sherwood, E. B. Taylor, H. Ware.

# Quality of Process Water Used in Kraft Paper Manufacture*

By Lewis B. Miller[1]

The present paper represents a brief summary of the results of an investigation made by the TAPPI Water Committee** on the subject of the "Quality of Water Used in Kraft Paper Manufacture." This investigation forms a part of the comprehensive investigational program of this committee into the quality of water required for the manufacture of different types of pulp and paper.

A questionnaire on the subject in question was prepared by the Water Committee and distributed to manufacturers of kraft paper through TAPPI headquarters. Twenty-five mills replied. These mills had the following geographical distribution: ten mills from southern United States; eight mills from northern United States; four Pacific Coast mills; three Canadian mills.

Rivers, lakes and wells are used as raw water supplies. Of the twenty-five mills replying eight use subsurface (well water) and seventeen use surface water. Of the latter, seven mills report that the surface waters which they use are contaminated by sewage or industrial wastes.

Of the twenty-five mills reporting, eleven use mechanical treatments to fit the raw water for process use. These treatments include screening, sedimentation, and filtration. Eight use chemical treatment, including alum to provide flocculation and chlorination.

From questions regarding the composition of the various raw waters and the process waters derived therefrom, and regarding the permissible upper limits of each constituent in the process water, the following tabulation is derived. The variations of concentration for each constituent in the raw waters and in the process waters are indicated.

The data presented in Table I indicate that the waters used for process purposes in kraft paper manufacture (it should be clearly understood that this does not include the preparation of kraft pulp) vary over the broadest range in dissolved and suspended constituents. A few of the data are somewhat doubtful as is the case of the raw and process waters which are reported as containing only 0.7 p.p.m. dissolved solids since such waters would constitute a very high grade of distilled water. Obviously waters of the widest divergence in quality are being used for kraft paper manufacture.

At the present time there is considerable activity in the field of kraft pulp bleaching with new pulp mills being installed and present mills converting to bleaching operations. As progress continues along this line and more kraft paper is manufactured from bleached pulp, there will be a tendency to use process water of higher quality in order to maintain the color and quality of the resultant paper.

A study of column four in Table I indicates that few kraft mills have any very clear cut and comprehensive specification for the quality of process water to be used and a study of the original data indicates that comparatively little is done at most mills to appreciably improve the quality of the raw water for process use. Column four also indicates that there is not even approximate agreement among different mills as to what constitutes satisfactory process water. For example, in the case of iron which is one of the "worst offenders" in paper mill process waters, reported permissible upper limits vary from 0.5 to 20 p.p.m. A careful study of the original data by the Water Committee clearly demonstrates, however, that the results obtained from the questionnaire, upon which this study was made, has provided a large amount of very valuable and useful information which at this time appears sufficient to permit the development of a tentative specification for the quality of process water to be used in kraft paper manufacture.

This questionnaire also provided other useful information.

The mills have reported on the water constituent which is most important to control in each particular case and these are variously indicated as being: suspended solids, iron, carbon dioxide, color, turbidity, pH, organic matter, manganese, and odor.

The reasons for controlling each of the constituents in question are reported as follows:

a. Suspended Solids and Turbidity
   Raises ash content of sheet.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Member of TAPPI; Chairman, TAPPI Water Committee; Chemical Engineer, W. H. & L. D. Betz, Philadelphia, Pa.

** The Water Committee of the Technical Association of the Pulp & Paper Industry has the following membership: Lewis B. Miller, Chairman; C. M. Connor, Glassine Paper Co.; Miss L. E. McGrath, Booth Chemical Co.; R. B. Martin, Wallace & Tiernan Co.; W. F. Mitchell, Pennsylvania Salt Mfg. Co.; J. G. Patrick, West Virginia Pulp & Paper Co.; E. N. Poor, American Cyanamid & Chemical Co.

TABLE I

| | Raw Waters Highest and Lowest Concentrations Reported, p.p.m. | Process Waters Highest and Lowest Concentrations Reported, p.p.m. | Permissible Upper Limits for Process Waters, p.p.m. as Specified by Different Mills |
|---|---|---|---|
| Turbidity as p.p.m. $SiO_2$ | 0.0 to 1000 | 0.0 to 200 | 5, 10, 50 |
| Color in color units | 0.0 to 200 | 0.0 to 40 | 10, 20, 20, 30 |
| Total solids in p.p.m. | 0.7 to 400 | 0.7 to 400 | 100 |
| Iron as p.p.m. Fe | 0.0 to 40 | 0.0 to 1.6 | 0.5, 0.5, 2, 10, 20 |
| Manganese as p.p.m. Mn | 0.0 to 1.0 | 0.0 to 45.0 | 0, 2.0 |
| Carbonate hardness as p.p.m. $CaCO_3$ | 0.0 to 372 | 0.0 to 100 | 500 |
| Noncarbonate hardness as p.p.m. $CaCO_3$ | 0.0 to 274 | 0.0 to 216 | None specified |
| Methyl orange alkalinity as p.p.m. $CaCO_3$ | 0.0 to 276 | 0.0 to 219 | 120, 300 |
| Phenolphthalein alkalinity as p.p.m. $CaCO_3$ | 0.0 to 12 | 0.0 | 100 |
| pH | 5.8 to 8.3 | 6.1 to 7.7 | 6.0 to 8.0, 8.0, 6.4 to 8.0 |
| Sulphate as p.p.m. $SO_4$ | 0.0 to 200 | 0.0 to 33.6 | 100, 400 |
| Chlorides as p.p.m. Cl | 0.0 to 200 | 1.4 to 200 | 10, 20, 75 |
| Silica (soluble) as p.p.m. $SiO_2$ | 0.29 to 53 | 2.3 to 53 | 7 |
| Organic matter in p.p.m. | 0.0 to 54 | 0.0 to 54 | trace, 0.1, 10 |
| Dissolved solids in p.p.m. | 0.7 to 400 | 10 to 250 | 100 |

Lowers strength and erodes equipment.
Affects color of bleached sheet.
Affects quality and cleanliness of sheet.
Causes pinholes in sheet (suspended solids).
Affects "freeness" of stock.
Increases "dirt count" of sheet.

b. Carbon Dioxide
Causes corrosion.

c. Color
Affects color and brightness of finished sheet (bleached stock).

d. pH
Affects sizing.

e. Iron and Manganese
Affects color and brightness of sheet (bleached stock).

f. Odor
Affects odor of paper used for wrapping food products.

g. Carbon Dioxide and Alkalinity
Cause foaming and difficulty in pulp washing.

h. Chloride
Affects electrical insulating properties.

There is general agreement among the mills reporting that microbiological growths cause difficulty. The specific ways in which these growths prove troublesome are reported as follows:

a. Nineteen (19) of the 25 mills report operating difficulties such as:
Breaking of sheet, particularly at the couch roll.
Responsible for frequent shut-downs and wash-ups (loss of operating time with consequent loss of production).
Clogging of piping.

b. Eight (8) mills report reduction in product quality, such as:
Slime spots.
Dirt and holes in paper.
Spots and discolorations (probably due to iron or manganese crenothrix growths).

The annual loss in dollars (or the equivalent) due to microbiological growths is variously reported as:

a. $24,000.00.
b. $200.00.
c. 3% of operating time.
d. Estimated at $0.25 per ton of paper produced.

In order to control biological growths the following treatments are used:

a. Five (5) mills report the use of chlorinated phenols.
b. Four (4) mills report the use of mercury compounds.
c. Seven (7) mills report the use of chlorination, either alone or with treatments other than ammonia.
d. Six (6) mills report the use of chloramines (chlorine and ammonia or ammonium salts).
e. Two (2) mills report the use of copper sulphate.

The TAPPI Water Committee wishes to express its appreciation to those mills which participated in this study by replying to the questionnaire. The Committee also wishes to thank Messrs. W. G. MacNaughton, R. G. Macdonald, Richard T. Bingham, and members of the TAPPI Headquarters Staff for their cooperation and assistance during the course of the investigation.

# Bending Quality of Paperboard*

## TAPPI Suggested Method T 474 sm-46

This method is a simple test of the bending quality of paperboard. It is primarily intended to distinguish between a bending and a nonbending board, the latter being used for set-up boxes only. No apparatus is required.

### Test Specimen

The specimens shall be unprinted, rectangular or square sheets at least 2⅛ inches wide and long, and cut in the principal directions of the paperboard. At least two specimens shall be tested. They shall be conditioned according to TAPPI Standard T 402 m.

### Procedure

Under pressure of the fingers, bend and crease a corner of the specimen flat at an angle of 45° to the machine or cross direction, so that the crease is 3.0 ± ⅛ inches long.

Bend and crease the specimen once so that the inside surfaces are in contact, and then bend and crease the specimen once in the same fold with the outside surfaces in contact. (The inside surface refers to the side that would normally face the inside of a carton made of the paperboard). Record any visible fibrous breaks or cracks in the surface on the folded specimen, after each crease is made.

### Report

Report the average number and lengths of visible breaks in the surface and if coated, the appearance of the folded surface resulting from the test.

### Additional Information

Paperboard that shows a fibrous break with this test is not of the highest quality. If no break is more than ¼ inch long, the board may be classified as "fair."

* This method is suggested by the Packaging Materials Testing Committee as being the most suitable to date. It is *not*, however, a TAPPI Standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y.

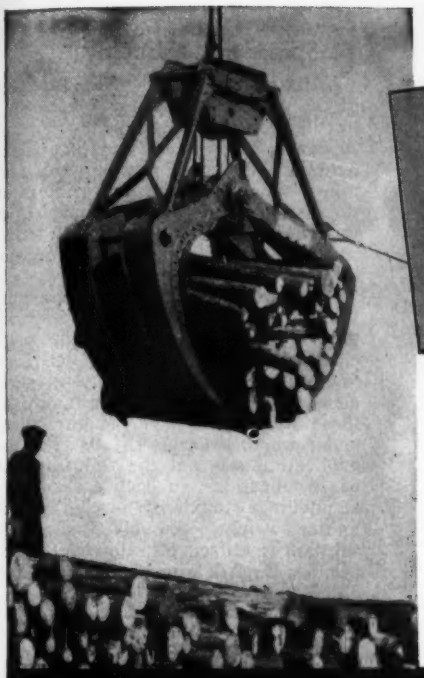
## TAPPI Notes

The Chicago Professional Paper Group will meet at the Chicago Bar Association Building on May 20th at 6:30 p.m. C. J. Dean of Socony-Vacuum Company will discuss "Petroleum Products for the Paper Industry."

Lt. Leonard J. Coughlin, formerly of the Army, is now chemist for the Dexter Sulphite Pulp and Paper Company, Dexter, N. Y.

D. J. MacLaurin, formerly of the Spruce Falls Pulp and Paper Company, is now control superintendent of the Powell River Company Ltd., Powell River, B. C. Mr. MacLaurin spent five years with the Royal Canadian Air Force as an Engineer Officer and was mentioned in the despatches.

Rene Filliat, director, and Leon Garcin, chemist of Papeteries F. Barjon, Moisans, Isere, France, are visiting in the United States.



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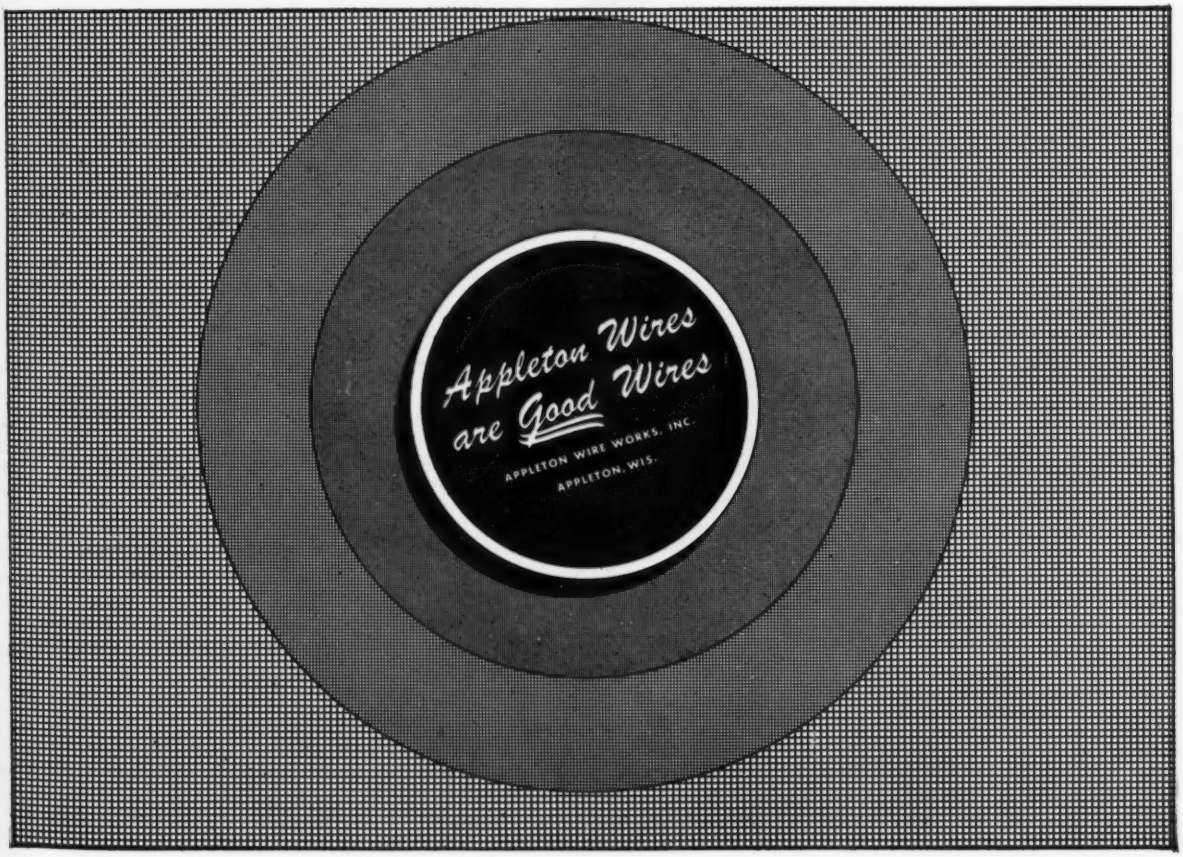

# Week's Record of Trends in The Paper and Pulp Market

Office of the PAPER TRADE JOURNAL,
Wednesday, May 15, 1946.

Over-all paper and paperboard production is beginning to drop as a result of the shrinkage in pulp inventories at most mills. Domestic pulp output shows some improvement, but until imports of pulp from overseas are resumed on a large scale, it is generally believed that operations will not attain March and April levels. Shortages of wood and coal are keeping some mills from operating at even close to capacity. The current situation is further aggravated by the diversion of railroad cars to the movement of food and grain destined to relieve overseas famine, such diversion cuts shipments of pulpwood to mills.

A relatively large part of available market pulp supplies is being used for book and writing paper output. At the same time, the gap between supplies and demand for printing papers continues to grow larger. Wrapping paper remains in tight supply. Tissue shortages in the South and Mid-west have been relieved somewhat by government release of 25,000,000 surplus rolls of paper. Demand for bond is still at high levels.

Newsprint demand is far above supplies with some improvement expected with the resumption of imports from Europe. Level of paperboard operations in the near future will depend largely on the coal situation. Waste paper continues as a major factor in the output of folding and set-up boxboard, jute liners and building paper, and remains important for many other paper grades as a supplement to pulp. Some concern has been expressed over the loss of waste paper to exports.

The index of general business activity for the week ended May 4 rose to 126.8 from 124.6 in the previous week, compared with 145.3 for the corresponding week in 1945. The index of paperboard production rose to 177.2 from 154.7 in the previous week, compared with 164.3 for the corresponding week in 1945.

Paper production for the week ended May 4 was estimated at 107.3 percent, compared with 100.6 for the preceding week, with 90.7 for the corresponding week in 1945, with 88.9 for 1944, with 90.6 for 1943, and with 98.2 percent for the corresponding week in 1942.

Paperboard production for the week ended May 4 was 101.0 percent, compared with 95.0 percent for the preceding week, with 97.0 for the corresponding week in 1945, with 98.0 for 1944, with 96.0 for 1943, and with 86.0 percent for the corresponding week in 1942.

### Wood Pulp

Swedish shipments of wood pulp to the United States in 1946 are not likely to exceed 700,000 tons. Sweden has overcome the pulp wood shortage only to be confronted with a serious dearth of coal. Poland is about the only source of coal left open to Sweden; with the result that the industry is unable to operate at more than 65 percent of capacity.

Thus, any increase in supplies of market pulp will have to come from domestic mills. Some encouragement may be found in the increased production of domestic bleached sulphite and bleached kraft in the last two months. Particularly, when we realize the deficit of overseas bleached pulp due to the continued shortage of bleaching materials in Scandinavian countries.

### Rags

Mill buying of new cotton cuttings is reported easing in certain quarters, but available supplies still fall short of consumer demand indicating a strong market prevails.

Practically all types of cuttings are commanding ceiling prices. Heavy wipers are $50 to $55 per ton with classification rags at $29 and $31. Foreign roofing rags are offered at $70 to $80.

### Old Rope and Bagging

Market continues steady with no change in the price situation. Soft jute has sold at 5 to 5.50c, mixed strings at $30 per ton and sisal strings at 4c per pound. Manila and sisal ropes remain at ceiling levels.

Demand for mill run and old gunny bagging is heavier than for No. 1 scrap burlap this week. No. 1 run bagging and No. 1 old gunny were difficult to obtain within the trade at 3.75c per pound. No. 1 scrap burlap was reported at 3.00c or slightly above.

### Waste Paper

Demand remains steady for most grades of waste paper with supplies in ample volume. Old corrugated is weaker relatively plentiful.

High grades remain strong. Kraft envelope cuttings, hard white shavings and tabulating cards are in greatest demand.

## Boston Trade to Golf June 10

BOSTON, Mass. — A new championship cup is being offered and 30 other worth-while prizes, to be competed for at the Summer Outing of the Boston Paper Trade Association, scheduled for Monday, June 10, at the Charles River Country Club.

## PIA Offers Simple Schedule To Spread Paper Supply

WASHINGTON, D. C.—The May issue of the Washington Digest, official publication of Printing Industry of America, Inc., trade association of the nation's commercial printers, will contain a simplified guide for printers on the purchase of paper to enable them to reduce paper weights to wartime standards. As it appears in the Washington Digest, the story says:

"In order to get the maximum amount of paper surface to print on, the three industries using the principal volume of book, groundwood, and fine paper, have agreed to urge their members to return to the usage of those weights of paper manufactured under wartime Order L-120. Then the publication sets out the following list of specifications, in each case recommending a maximum weight, with lighter weight optional: Coated, 70 substance; Offset, 50; Bonds, 16; Super, 50; English Finish, 45; Newsprint, 32; Cover, 50.

## Martin Usdan Joins H. & U. Paper Firm

Martin J. Usdan has been elected vice-president of Heller and Usdan, Inc., New York paper merchants. He is an alumnus of Virginia Polytechnic Institute from which he entered the military service.

He was in the Fifth Army in Italy with the 404th Engineer Combat Bn. and the 39th Engineer Combat Group and recently received his discharge as a First Lieutenant.

His father, David Usdan, is well known throughout the cordage and paper industry, being one of the founders of Heller and Usdan, Inc.

## Embargo Clogs Waste Market

BOSTON — On account of the coal freight embargo last week, which has since been lifted, business in paper stock reacted. Some paper mills were strike-bound, so that they were unable to take in supplies already contracted for. The waste paper market was a little easier. The weakest grade was corrugated boxes, which some mills refused to take. The supply of waste paper is no greater than it has been. As soon as the mills are fully reconverted, the supply will be equal only to the demand. Some bagging is being imported, but in no great tonnage and subject to an export permit. Paper stock prices are unchanged.

## Potts and Benson Join NEPMA

BOSTON, Mass.—W. T. Potts Company, Inc., and Benson Brothers Company, both of Worcester, Mass., have recently been enrolled as members of the New England Paper Merchants Association. The total membership is now 77 houses throughout New England.

# It doesn't *Cost* to switch to JOHNSON *Rotary Pressure* JOINTS ... it *Pays!*

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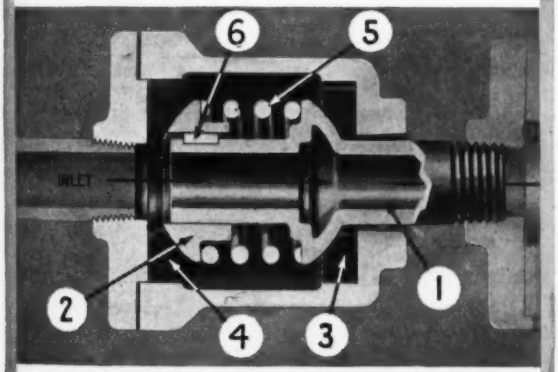
***Increased plant efficiency alone*** would make the Johnson Joints a good investment, yet the savings in maintenance can quickly pay the cost of changing over.




***Completely Packless.*** Rotating member consists of nipple (1) and sliding collar (2), keyed together (6). Seal is accomplished by carbon graphite ring (3), forced by pressure tightly against nipple.

***Self-Oiling.*** Seal ring and bearing ring (4) are of long-lived carbon graphite—require no lubrication.

***Self-Adjusting.*** Spring (5) is for initial seating only. Joint in operation is pressure sealed; the higher the pressure, the tighter the seal.

***Self-Aligning.*** Ball and socket joints between rotating member and rings provide angular flexibility. Space between nipple and housing allows lateral movement.

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# Appleton FELTS

**APPLETON WOOLEN MILLS** APPLETON, WIS.

## MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 15, 1946.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Moderate demand is reported. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Demand is very heavy. Supply situation is reported favorable at this date. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 33 cents per pound; 2,000 pounds, 33¼ cents per pound; less than 2,000 pounds, 33¾ cents per pound, f.o.b. shipping point. Imported, currently above ceiling prices.

CAUSTIC SODA—Current demand is heavy. Production high, but deliveries slow. Market tight. Supply of drums short. Solid caustic soda is quoted at $2.30 per 100 pounds; flaked and ground is quoted at $2.70 per 100 pounds.

CHINA CLAY—Quotations remain unchanged. Demand is reported moderate. Supply short. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand reported heavy with most essential paper requirements fully met. Deliveries are slow. Quotations unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—No offerings and sales. "G" gum rosin is quoted at $6.74 per 100 pounds, in barrels, at Savannah; "FF" rosin at $6.70 per 100 pounds in barrels, at New York; seventy per cent gum rosin size at $6.95 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged. Current demand is relatively heavy. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—All-over demand continues heavy. Market remains tight with demand above output. Bulk lot shipments steady. Bagged lots still slow. Quotations reported unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.95; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Corn market is reported steady. Starch prices continue unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA — Demand reported good. Supply situation improving. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots. f.o.b. works. The iron free is currently quoted at $1.75 per 100 pounds, in bags, at works.

SULPHUR—Demand active. Quotations on sulphur continue to conform to prevailing market pries. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand good. Domestic grades are currently quoted at from $16 to $30 per ton at mines; Canadian at $25 to $30 per ton. All prices in car lots.

## MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

### Paper

(Delivered New York)

Standard News, per ton—

| | | | |
|---|---|---|---|
| Roll, contract | *$67.00 | @ | — |
| Sheets | 75.00 | @ | — |

* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities
Zone A, Delivered

| | | | |
|---|---|---|---|
| Superstandard Wrapping | *$5.25 | @ | — |
| No. 1 Wrapping | *5.00 | " | — |
| Standard Wrapping | *4.75 | " | — |
| Standard Bag | *4.375 | " | — |

* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots

| | | | |
|---|---|---|---|
| White No. 1 | 1.12½ | " | — |
| White No. 1 M. G. | 1.10 | " | — |
| White No. 1¼ | 1.00 | " | — |
| White No. 2 | .90 | " | — |
| Anti-Tarnish M.F. | 1.20 | " | — |
| Colored | — | " | — |
| Kraft | .95 | " | — |
| Manila | .90 | " | — |

Toilet—1 M. Sheets—Per Case

| | | | |
|---|---|---|---|
| Unbleached | 4.25 | " | — |
| Bleached | 5.70 | " | — |
| Unbl. Toilet, 1 M. | 4.16 | " | — |
| Bleached Toilet | 5.70 | " | — |

Paper Towels, Per Case—

| | | | |
|---|---|---|---|
| Unbleached, Jr. | 2.20 | " | — |
| Bleached, Jr. | 3.20 | " | — |

Manila—per cwt.—C. l. f. a.

| | | | |
|---|---|---|---|
| No. 1 Jute | 11.25 | @ | — |
| No. 1 Manila 35 lb. | 6.00 | " | 7.00 |

Boards, per ton—

| | | | |
|---|---|---|---|
| News | *$54.00 | @ | — |
| Chip | *54.00 | @ | — |
| Sgl. Mla. Ll. Chip | *65.00 | @ | — |
| White Pat. Coated | *79.00 | @ | — |
| Kraft Liners 50 lb. | *74.00 | " | — |
| Binders Boards | 84.00 | " | 116.00 |

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

| | Bonds | Ledgers |
|---|---|---|
| 100% Rag Ext. No. 1 | $39.10@$46.00 | $40.25@$47.25 |
| 100% Rag | 32.20 " 37.75 | 33.35 " 39.25 |
| 85% Rag | .... " .... | 29.90 " 35.00 |
| 75% Rag | 23.00 " 27.00 | 24.15 " 28.25 |
| 65% Rag | .... " .... | 22.80 " 27.75 |
| 50% Rag | 18.70 " 22.75 | 19.90 " 24.25 |
| 25% Rag | 16.40 " 20.00 | 17.55 " 21.50 |

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

| | Bonds | Ledgers |
|---|---|---|
| No. 1 | $10.55@$12.75 | $11.70@$14.25 |
| No. 2 | 9.65 " 11.75 | 10.80 " 13.25 |
| No. 3 | 9.20 " 11.25 | 10.35 " 12.50 |
| No. 4 | 8.90 " 10.75 | 10.05 " 12.25 |

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper
Delivered in Zone 1:

| | | | |
|---|---|---|---|
| No. 1 Glossy Coated | $13.65 | @ | $15.50 |
| No. 2 Glossy Coated | 12.40 | " | 14.00 |
| No. 3 Glossy Coated | 11.60 | " | 13.25 |
| No. 4 Glossy Coated | 11.15 | " | 12.75 |
| No. 1 Antique (watermarked) | 10.25 | " | 11.75 |
| No. 2 Offset | 9.60 | " | 11.00 |
| A Grade E. F. | 9.35 | " | 10.75 |
| A Grade S. & S. C. | 9.60 | " | 11.00 |
| B Grade E. F. | 8.85 | " | 10.25 |
| B Grade S. C. | 9.10 | " | 10.50 |
| C Grade E. F. | 8.55 | " | 9.75 |
| C Grade S. C. | 8.80 | " | 10.00 |
| D Grade E. F. | 8.25 | " | 9.50 |
| D Grade S. & S. C. | 8.50 | " | 9.75 |

Ivory & India at $.50 cwt. extra.

### Wood Pulp

OPA Maximum Prices and Canadian Manufacturers' Prices, Less Freight. Not Exceeding OPA Allowances.

| | |
|---|---|
| Bl. Softwood Sulphite | $94.00 |
| Unbl. Softwood Sulphite | 82.00 |
| Bl. Hardwood Sulphite | 91.50 |
| Unbl. Hardwood Sulphite | 79.50 |
| Bl. Glassine Sulphite | 97.00 |
| Unbl. Glassine Sulphite | 86.00 |
| N. Bleached Sulphate | 94.00 |
| S. Bleached Sulphate | 88.00 |
| N. Semi-Bleached Sulphate | 89.00 |
| S. Semi-Bleached Sulphate | 83.00 |
| N. Unbl. Sulphate | 76.00 |
| S. Unbl. Sulphate | 69.50 |
| Bl. Soda | 84.00 |
| Unbl. Soda | 80.00 |
| Groundwood | 58.00 |

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

| | Below 50% Air Dry Weight |
|---|---|
| Northeast | $12.50 |
| Lake Central | 12.50 |
| Southern | 15.00 |
| West Coast (in area) | 9.50 |
| West Coast (out area) | 15.50 |

| | 50%-80% Air Dry Weight |
|---|---|
| Northeast | $10.50 |
| Lake Central | 10.50 |
| Southern | 13.00 |
| West Coast (in area) | 8.50 |
| West Coast (out area) | 14.50 |

Applying to Producers of Dry Wood Pulp.

| | Above 80% Air Dry Weight |
|---|---|
| Northeast | $7.50 |
| Lake Central | 7.50 |
| Southern | 10.00 |
| West Coast (in area) | 6.50 |
| West Coast (out area) | 12.50 |

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

### Domestic Rags

New Rags

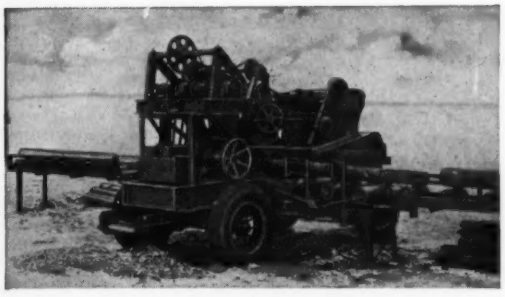
(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1. | 6.50 | @ | 7.25* |
| Silesias No. 1 | — | " | 5.75* |
| New Unbleached | 6.75 | " | 7.50* |
| Blue Overall | — | " | 5.50* |
| Fancy | — | " | 3.50* |
| Washables | — | " | 3.00* |
| Bleached Khaki Cuttings | — | " | 4.25* |
| Unbleached Khaki Cuttings | — | " | 3.50* |

* OPA Maximum Prices.

# NEKOOSA PORTABLE WOOD PEELER

## *10 Men*



**The number of men required to operate the Nekoosa Portable Wood Peeler is determined by the layout of the wood handling equipment on the particular operation. Ten men can operate it without auxiliary equipment and produce as much peeled wood as 50 men peeling by hand. Auxiliary handling equipment will further eliminate labor.**

**Machine is operated by 30 H.P. motor.**

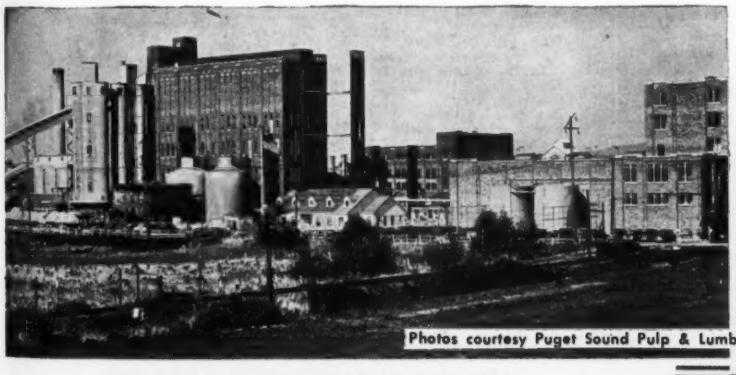
**Write for descriptive bulletin**

**Large Capacity**
**Low Cost Operation**
**No Wood Loss**

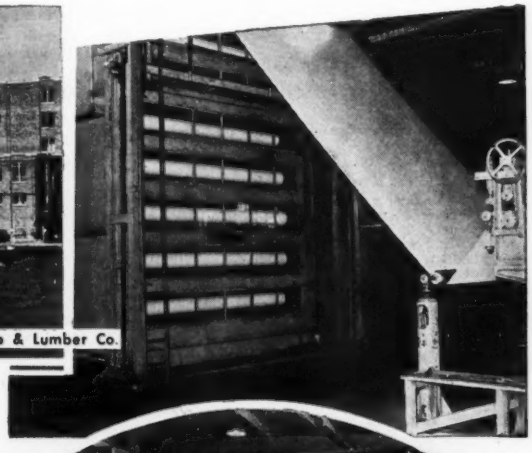
**manufactured by**

## Nekoosa Foundry & Machine Works Inc.

**Nekoosa, Wis.** **U. S. A.**



Photos courtesy Puget Sound Pulp & Lumber Co.



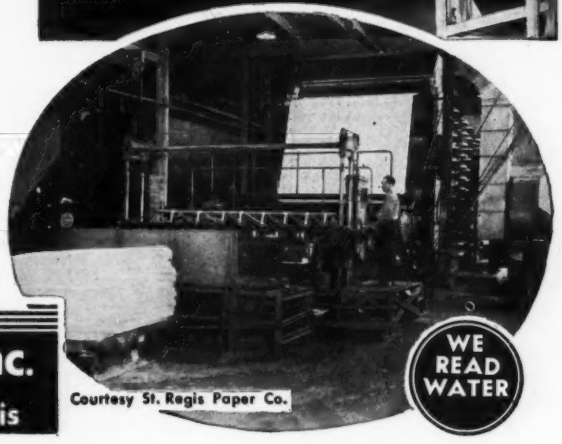
# HAERING GLUCOSATES

**CONTROL**

**CORROSION, SCALE, ALGAE**

**in the**

**PULP AND PAPER INDUSTRY**



Courtesy St. Regis Paper Co.

WE READ WATER

WRITE FOR THE LATEST "H-O-H LIGHTHOUSE"

**D. W. HAERING & CO., Inc.**

GENERAL OFFICES:

205 West Wacker Drive, Chicago 6, Illinois

### Old Rags

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | *3.35 | @ | — |
| Miscellaneous | *3.20 | " | — |
| White, No. 2— | | | |
| Repacked | *2.90 | " | — |
| Miscellaneous | *2.65 | " | — |
| Thirds and Blues— | | | |
| Repacked | *2.20 | " | — |
| Miscellaneous | *1.30 | " | — |
| Roofing Rags— | | | |
| No. 1 | *1.55 | " | — |
| No. 2 | *1.45 | " | — |
| No. 3 (bagging) | *1.35 | " | — |
| No. 4 | *1.35 | " | — |
| No. 5A | *1.35 | " | — |
| Old Manila Rope | 5.75 | " | — |

* OPA Maximum Prices.

## Foreign Rags

Pre-War Quotations

All Prices Nominal

### New Rags

| | | | |
|---|---|---|---|
| New Dark Cuttings | 2.25 | @ | 2.40 |
| New Mixed Cuttings | 2.00 | " | 2.20 |
| New Light Silesias | 5.50 | " | 5.75 |
| Light Flannelettes | 5.50 | " | 5.75 |
| New White Cuttings | 7.00 | " | 7.50 |
| New Light Oxfords | 4.00 | " | 4.50 |
| New Light Prints | 3.00 | " | 3.25 |

### Old Rags

| | | | |
|---|---|---|---|
| No. 1 White Linens | 7.50 | " | 8.50 |
| No. 2 White Linens | 6.50 | " | 7.50 |
| No. 3 White Linens | 4.50 | " | — |
| No. 4 White Linens | 2.25 | " | 3.25 |
| No. 1 White Cottons | 4.25 | " | 4.75 |
| No. 2 White Cotton | 3.25 | " | 3.75 |
| No. 3 White Cotton | 2.50 | " | 3.00 |
| No. 4 White Cotton | 1.90 | " | 2.20 |
| Extra Light Prints | 2.00 | " | 2.40 |
| Ord. Light Prints | 1.75 | " | 2.15 |
| Med. Light Prints | 1.55 | " | 1.95 |
| Dutch Blue Cottons | 2.25 | " | 2.50 |
| French Blue Linens | 1.00 | " | — |
| Checks and Blues | 2.00 | " | — |
| Linsey Garments | 1.90 | " | 2.00 |
| Dark Cottons | 1.50 | " | 1.60 |
| Old Shopperies | 1.30 | " | 1.45 |
| New Shopperies | 1.45 | " | 1.50 |
| French Blues | 2.25 | " | 2.50 |

## BAGGING

(Prices to Mill, f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | Nominal | | |
| Domestic | 3.25 | @ | 3.30 |
| Wool Tares, light | 3.25 | " | 3.50 |
| Wool Tares, heavy | 3.50 | " | 3.75 |
| Bright Bagging | 3.25 | " | 3.50 |
| Manila Rope— | | | |
| Foreign | — | " | — |
| Domestic | *5.75 | " | — |
| Jute Threads | 5.50 | " | — |
| No. 1 Sisal Strings | *4.00 | " | — |
| Mixed Strings | 1.50 | " | — |

* OPA Maximum Prices.

## Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

| | | | |
|---|---|---|---|
| No. 1 Hard White Envelope Cuts, one cut | 3.37½ | @ | — |
| No. 1 Hard White Envelope Cuts | 3.12½ | " | — |
| No. 1 Hard White Shavings, unruled | 2.87½ | " | — |
| No. 1 Hard White Shavings, ruled | 2.50 | " | — |
| Soft White Shavings, one cut | 2.87½ | " | — |
| No. 1 Soft White Shavings | 2.50 | " | — |
| Soft White Shavings, Misc. | 2.15 | " | — |
| No. 1 Fly Leaf Shavings | 1.67½ | " | — |
| No. 2 Fly Leaf Shavings | 1.12½ | " | — |
| No. 1 Groundwood Fly Leaf Shavings | 1.25 | " | — |
| No. 2 Mixed Groundwood Fly Leaf Shavings | .90 | " | — |
| Mixed Colored Shavings | .75 | " | — |
| Mixed Groundwood Colored Shavings | .90 | " | — |
| Overissue Magazines | 1.67½ | " | — |
| No. 1 Heavy Books & Magazines | 1.92½ | " | — |
| Mixed Books | 1.10 | " | — |
| No. 1 White Ledger | 2.30 | " | — |
| No. 2 Mixed Ledger, colored | 2.00 | " | — |
| New Manila Envelope Cuttings, one cut | 2.87½ | " | — |
| New Manila Envelope Cuttings | 2.65 | " | — |
| Extra Manilas | 1.95 | " | — |
| Mixed Kraft, Env. & Bag Cuttings | 2.75 | " | — |
| Kraft Envelope Cuttings | 3.25 | " | — |
| Triple Sorted, No. 1 Brown Soft Kraft | 2.50 | " | — |
| New 100% Kraft Corrugated Cuttings | 2.25 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| New Jute Corrugated Cuttings | .90 | " | — |
| Old 100% Kraft Corrugated Containers | 1.75 | " | — |
| Old Corrugated Containers | 1.40 | " | — |
| Box Board Cuttings | .73½ | " | — |
| White Blank News | 1.65 | " | — |
| Overissue News | 1.10 | " | — |
| No. 1 News | 1.00 | " | — |
| No. 1 Mixed Paper | .95 | " | — |
| Old Corrugated Containers | .82½ | " | — |
| Mill Wrappers | 1.10 | " | — |
| No. 1 New Light Burlap | 3.00 | " | 4.00 |
| New Burlap Cuttings | 3.75 | " | 4.00 |

## Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

| | | | |
|---|---|---|---|
| Coarse Polished— | | | |
| India | .21 | @ | — |
| White Hemp | .21 | " | — |
| Fine Polished— | | | |
| Fine India | .26 | " | — |
| Unpolished— | | | |
| Box | .17¼ | " | — |
| Paper Makers | .17 | " | — |
| Tube Rope | .19 | " | — |
| Wall Paper | .20½ | " | — |
| Wrapping | .23 | " | — |
| Soft Fiber Rope | .19 | " | — |
| Cotton | .25 | " | — |

(Hard Fiber)

| | | | |
|---|---|---|---|
| Medium Java | .18 | " | — |
| Mex. Sisal | .16 | " | — |
| Manila | — | " | — |

## PHILADELPHIA

### Domestic Rags (New)

(Price to Mill)

| | |
|---|---|
| Shirt Cuttings— | |
| New White No. 1 | .07¼ |
| New White No. 2 | .05¾ |
| Light Silesias | .05¾ |
| Black Silesias, soft | .03¾ |
| New Unbleached | .07½ |
| Washable Prints | .04¾ |
| Washable No. 1 | .03 |
| Blue Overall | .05½ |
| Cottons—According to grades— | |
| Washable Shredding | .01¾ |
| Fancy Percales | .04¼ |
| New Black Soft | .03¼ |
| Khaki Cuttings— | |
| Unbleachable Cotton Cuttings | .03½ |
| Bleachable Cotton Cuttings | .04¼ |
| Men's Corduroy | .03½ |
| Ladies' Corduroy | .03 |
| Cottonades | .03¼ |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1—Repacked | 3.30 | @ | — |
| Miscellaneous No. 1 | 3.20 | " | — |
| Miscellaneous No. 2 | 2.65 | " | — |
| White No. 2—Repacked | 2.90 | " | — |
| Thirds and Blues— | | | |
| Miscellaneous | 1.80 | " | — |
| Repacked | 2.20 | " | — |
| Black Stockings— | | | |
| (Export) | Nominal | | |
| Roofing Stock— | | | |
| Foreign No. 1 | Nominal | | |
| Domestic No. 1 | 1.55 | " | — |
| Domestic No. 2 | 1.45 | " | — |
| Roofing Bagging | 1.35 | " | — |
| Old Manila Rope | 5.75 | " | — |

### Bagging

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | Nominal | | |
| Domestic | 3.00 | @ | 3.50 |
| No. 1 Clean Bright— | | | |
| Sisal Strings | .04 | " | — |
| No. 2 Clean Bright— | | | |
| Sisal Strings | .03 | " | — |
| Sisal Jute | .02½ | " | .02¾ |
| Scrap— | | | |
| No. 1 | 3.25 | " | 3.50 |
| No. 2 | 1.75 | " | 1.80 |
| Wool Tares, heavy | 4.00 | " | 4.25 |

### Old Papers

(F. o. b. Phila.)

OPA Maximum Prices, Baled

| | | | |
|---|---|---|---|
| No. 1 Hard White Envelope Cuts, one cut | 3.37½ | @ | — |
| No. 1 Hard White Shavings, unruled | 2.87½ | " | — |
| Soft White Shavings, one cut | 2.50 | " | — |
| White Blank News | 1.65 | " | — |
| Soft White Shavings, Misc. | 2.15 | " | — |
| No. 1 Soft White Shavings | 2.50 | " | — |
| No. 1 Fly Leaf Shavings | 1.67½ | " | — |
| No. 2 Fly Leaf Shavings | 1.12½ | " | — |
| No. 1 Groundwood Fly Leaf Shavings | 1.25 | " | — |
| No. 2 Groundwood Fly Leaf Shavings | .90 | " | — |
| Mixed Colored Shavings | .75 | " | — |
| New Manila Envelope Cuts, one cut | 2.87½ | " | — |
| Hard White Envelope Cuts, one cut | 3.37½ | " | — |
| Triple Sorted No. 1 Brown Soft Kraft | 2.50 | " | — |
| Mixed Kraft Env. & Bag Cuttings | 2.75 | " | — |
| Kraft Envelope Cuttings | 3.25 | " | — |
| No. 1 Heavy Books & Magazines | 1.92½ | " | — |
| New Manila Envelope Cuts, one cut | 2.87½ | " | — |
| New Manila Envelope Cuttings | 2.65 | " | — |
| White and Colored Tabulating Cards | 2.25 | " | — |
| Ground Wood Tabulating Cards | 1.35 | " | — |
| White Blank News | 1.65 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| No. 1 Mixed Paper | .95 | " | — |
| Overissue News | 1.10 | " | — |
| Box Board Cuttings | .73½ | " | — |
| New Corrugated Cuttings, Kraft | 2.25 | " | — |
| Old 100% Kraft Corrugated Containers | 1.75 | " | — |
| Old Corrugated Containers | 1.40 | " | — |
| Jute Corrugated Cuttings | 1.07½ | " | — |

### Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny Bagging— | | | |
| Foreign | (nominal) | | |
| Domestic | 2.75 | @ | 2.90 |
| Sisal Rope No. 1 | *4.75 | " | — |
| Sisal Rope No. 2 | * — | " | 4.00 |
| Mixed Rope | 1.60 | " | — |
| Transmission Rope— | | | |
| Foreign | (nominal) | | |
| Domestic | 2.75 | " | 3.00 |
| Manila Rope— | | | |
| Foreign | (nominal) | | |
| Domestic | 5.75 | " | — |
| Soft Jute Rope | 4.50 | " | 5.00 |
| Jute Carpet Threads | 3.00 | " | 3.50 |
| Bleachery Burlap | 8.50 | " | 9.00 |
| Scrap Burlap— | | | |
| Foreign | (nominal) | | |
| Domestic | 3.00 | " | 3.25 |
| South America | — | " | 3.25 |

## BOSTON

### Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

| | | | |
|---|---|---|---|
| No. 1 Hard White Shavings, unruled | 2.87½ | @ | — |
| No. 1 Hard White Shavings, ruled | 2.50 | " | — |
| Soft White Shavings, Misc. | 2.15 | " | — |
| No. 1 Fly Leaf Shavings | 1.67½ | " | — |
| No. 2 Fly Leaf Shavings | 1.12½ | " | — |
| No. 1 Groundwood Fly Leaf Shavings | 1.25 | " | — |
| No. 2 Groundwood Fly Leaf Shavings | .90 | " | — |
| Mixed Colored Shavings | .75 | " | — |
| New Manila Envelope Cuts, one cut | 2.87½ | " | — |
| Hard White Envelope Cuts, one cut | 3.37½ | " | — |
| Triple Sorted No. 1 Brown Soft Kraft | 2.50 | " | — |
| Mixed Kraft Env. & Bag Cuttings | 2.75 | " | — |
| Kraft Envelope Cuttings | 3.25 | " | — |
| No. 1 Heavy Books & Magazines | 1.92½ | " | — |
| New Manila Envelope Cuts, one cut | 2.87½ | " | — |
| New Manila Envelope Cuttings | 2.65 | " | — |
| White and Colored Tabulating Cards | 2.25 | " | — |
| Ground Wood Tabulating Cards | 1.35 | " | — |
| White Blank News | 1.65 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| No. 1 Mixed Paper | .95 | " | — |
| Overissue News | 1.10 | " | — |
| Box Board Cuttings | .73½ | " | — |
| New Corrugated Cuttings, Kraft | 2.25 | " | — |
| Old 100% Kraft Corrugated Containers | 1.75 | " | — |
| Old Corrugated Containers | 1.40 | " | — |
| Jute Corrugated Cuttings | 1.07½ | " | — |

### Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny Bagging— | | | |
| Foreign | (nominal) | | |
| Domestic | 2.75 | @ | 2.90 |
| Sisal Rope No. 1 | *4.75 | " | — |
| Sisal Rope No. 2 | * — | " | 4.00 |
| Mixed Rope | 1.60 | " | — |
| Transmission Rope— | | | |
| Foreign | (nominal) | | |
| Domestic | 2.75 | " | 3.00 |
| Manila Rope— | | | |
| Foreign | (nominal) | | |
| Domestic | 5.75 | " | — |
| Soft Jute Rope | 4.50 | " | 5.00 |
| Jute Carpet Threads | 3.00 | " | 3.50 |
| Bleachery Burlap | 8.50 | " | 9.00 |
| Scrap Burlap— | | | |
| Foreign | (nominal) | | |
| Domestic | 3.00 | " | 3.25 |
| South America | — | " | 3.25 |
| Wool Tares— | | | |
| Foreign | (nominal) | | |
| Domestic | 4.25 | " | — |
| Aust. Wool Pouches | — | " | 3.65 |
| New Zealand Wool Pouches | — | " | 3.50 |
| New Burlap Cuttings | 4.75 | " | 5.00 |
| Heavy Baling Bagging | 4.00 | " | 4.25 |
| Paper Mill Bagging | 2.50 | " | 3.00 |
| No. 2 Roofing Bagging | 1.35 | " | — |

* OPA Maximum Prices.

### Domestic Rags (New)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New Light Prints | .04½ | @ | .04¾ |
| Fancy Percales | .04¼ | " | .05 |
| New White No. 1 | .06¾ | " | .07 |
| New Light Flannelettes | .05½ | " | .06 |
| Canton Flannels, Bleached | .06 | " | .06¾ |
| Underwear Cutters, Bleached | .06¾ | " | .06¾ |
| Underwear Cutters, Unbleached | .05¾ | " | .06 |
| Silesias No. 1 | .06 | " | .06¾ |
| New Black Silesias | .03 | " | .03¾ |
| Red Cotton Cuttings | .03½ | " | .04 |
| Soft Unbleached | .06½ | " | .06¾ |
| Blue Cheviots | .05½ | " | .06 |
| Fancy | .03¾ | " | — |
| Washable | .02½ | " | — |
| Khaki Cuttings | .02¾ | " | .03 |
| O. D. Khaki | .03½ | " | .03¾ |
| Corduroy | .03¼ | " | .03¾ |
| New Canvas | .06¼ | " | .06½ |
| B. V. D. Cuttings | .06¼ | " | .06¾ |

### Domestic Rags (Old)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked | 3.80 | @ | — |
| Miscellaneous | 3.20 | " | — |
| White No. 2— | | | |
| Miscellaneous | 2.65 | " | — |
| Twos and Blues, Repacked | 2.20 | " | — |
| Old Blue Overalls | 2.25 | " | 2.50 |
| Thirds and Blues, Repacked | 2.20 | " | — |
| Miscellaneous | 1.80 | " | — |
| Black Stockings | 3.50 | " | 4.00 |
| Roofing Stock— | | | |
| No. 1 | 1.55 | " | — |
| No. 2 | 1.45 | " | — |
| No. 3 | 1.35 | " | — |
| No. 4 | 1.35 | " | — |
| No. 5, Quality A | 1.85 | " | — |
| Quality B | 1.20 | " | — |
| Quality C | .95 | " | — |
| Old Manila Rope | 5.75 | " | — |

* OPA Maximum Prices.

### Foreign Rags

(F. o. b. Boston)

| | |
|---|---|
| Canvas | (nominal) |
| Dark Cottons | (nominal) |
| Dutch Blues | (nominal) |
| New Checks and Blues | (nominal) |
| Old Fustians | (nominal) |
| Old Linsey Garments | (nominal) |
| New Silesias | (nominal) |

## CHICAGO

### Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White Envelope Cuts, one cut | 3.37½ | @ | — |
| No. 1 Hard White Shavings, unruled | 2.87½ | " | — |
| No. 1 Soft White Shavings | 2.50 | " | — |
| No. 1 White Ledger | 2.30 | " | — |
| No. 1 Heavy Books & Magazines | 1.92½ | " | — |
| White Blank News | 1.65 | " | — |
| Mixed Kraft Env. & Bag Cuttings | 2.75 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| Overissue News | 1.10 | " | — |
| No. 1 News | 1.00 | " | — |
| No. 1 Mixed Paper | .95 | " | — |
| No. 1 Roofing Rags | 1.35 | " | — |
| No. 1 Roofing Bags | 1.45 | " | — |

"...CONSISTENTLY GOOD RESULTS"

Combining the advantages of less dust with satisfactory dispersion, Witco #11 has been developed especially for the preparation of non-fading black papers, semi-conducting papers and lightproof paper wrappers. Witco #11 may be added directly to the pulp in the beater and contains no wetting agent or other ingredients which might interfere with size or alter the water absorption of the finished paper. Witco #11 can be relied upon to give consistently good results at an economical cost.

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**UNITED BLACKS**

**DIXIE**

**KOSMOS**

**PARIS BLACKS**

Carbon blacks for all paper and board stocks—outstanding soft texture, particle fineness and jet black color. Takes well to the fiber, shows high retention.

Best for performance in the Beater and Jordan because of ease of wetting and ready dispersion in the furnish.

**UNITED CARBON COMPANY, INC.**

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CHARLESTON 27
WEST VA.

CANADA:
CANADIAN
INDUSTRIES, LIMITED

# Paper and Paper Stock Imports At New York and Other Ports

## NEW YORK IMPORTS

WEEK ENDING MAY 11, 1946

SUMMARY

Newsprint ..... 12,305 rolls
Filter Paper ..... 1 cs.
Tracing Cloth ..... 27 bls.
Miscellaneous Paper ....12 bls., 1 cs.

### NEWSPRINT

N. Y. Journal American, Markland, Liverpool, N. S., 1014 rolls.
N. Y. Tribune, Inc., Markland, Liverpool, N. S., 1514 rolls.
N. Y. World Telegram, Markland, Liverpool, N. S., 678 rolls.
Brooklyn Eagle, Inc., Markland, Liverpool, N. S., 617 rolls.
Herald Statesman, Inc., Markland, Liverpool, N. S., 40 rolls.
News Syndicate Co., Inc., Gella, Baie Comeau, Que, 6678 rolls.
H. G. Craig, Donpaco, Donacona, Que., 318 rolls.
International Paper Co., International No. 1, Gatineau, Que., 303 rolls.
H. G. Craig, G. D. D., Donacona, Que., 403 rolls.
H. G. Craig, Kermic, Donacona, Que., 340 rolls.
H. G. Craig, A. C. D., Donacona, Que., 400 rolls.

### FILTER PAPER

E. H. Sargent & Co., Inc., Kanangoora, Gothenburg, 1 cs.

### TRACING CLOTH

Keuffel & Esser Co., Cape Ann, Liverpool, 27 bls. (bleached cotton).

### MISCELLANEOUS PAPER

Hudson Shipping Co., American Shipper, Havre, 12 bls.
International Expiditers, Inc., Kanangoora, Gothenburg, 1 cs.

### RAGS, BAGGINGS, ETC.

Public National Bank, Trust Co., Taubate, Santos, 527 bls. cotton waste.
New England Waste Co., Taubate, Santos, 50 bls. cotton waste.
Padawer Co., Taubate, Recife, 271 bls. cotton picker waste.
Kendall Mills, Taubate, Recife, 100 bls. cotton linters.
Massasoit Manufacturing Co., Taubate, Recife, 110 bls. cotton thread waste.
Atlas Waste Manufacturing Co., Biddeford Victory, Buenos Aires, 7 bls. wool rags; 3 bls. wool thread waste.
Josef Stein, Biddeford Victory, Buenos Aires, 9 bls. worsted rags; 2 bls. rags.
A. W. Fenton, Cape Ann, Liverpool, 34 bls. cotton rags.
E. Butterworth & Co., Inc., Cape Ann, Liverpool, 75 bls. old cotton rags.
New England Waste Co., Sophocles, Buenos Aires, 1353 bls. cotton linters.
(———), St. Cloud Victory, Genoa, 100 bls. cotton thread waste.
Padawer Co., Maua, Rio de Janiero, 70 bls. cotton waste.
Boston Fibre Corp., Maua, Rio de Janiero, 100 bls. cotton linters.
Atlas Waste Manufacturing Co., Pres. Taft, Cochin, 600 bls. cotton waste.
Schimmel Trading Corp., Pres. Taft, Cochine, 400 bls. cotton waste.
Padawer Co., Pres. Taft, Cochin, 736 bls. cotton waste.
Brandwein Mazur Co., Pres. Taft, Cochin, 500 bls. cotton waste.
Riverside Mills, Pres. Taft, Cochin, 947 bls. cotton waste.
Camden Fibre Mills, Pres. Taft, Cochin, 100 bls. cotton waste.
Empire Fibres, Inc., Pres. Taft, Cochin, 100 bls. cotton waste.
New England Waste Co., Pres. Taft, Cochin, 1636 bls. cotton waste.
Englander Co., Pres. Taft, Cochin, 100 bls. cotton waste.
Burkhoft Manufacturing Co., Pres. Taft, Cochin, 763 bls. cotton waste.
Leigh Textile Co., Pres. Taft, Cochin, 380 bls. cotton waste.
Lush Cotton Products Co., Pres. Taft, Cochin, 600 bls. cotton waste.
Ayres W. C. Jones, Pres. Taft, Cochin, 100 bls. cotton waste.
H. Chanin Corp., Pres. Taft, Cochin, 250 bls. cotton waste.
W. D. Lane, Pres. Taft, Cochin, 50 bls. cotton waste.
S. H. Waldestein, Pres. Taft, Cochin, 100 bls. cotton waste.
Lush Cotton Products Corp., Glen Cameron, Tuticorin, 7 bls. cotton waste.
New England Waste Co., Glen Cameron, Tuticorin, 930 bls. cotton waste.
(———), Glen Cameron, 400 bls. cotton waste.
New England Waste Co., Glen Cameron, Cochin, 106 bls. cotton waste.
Burton Dixie Corp., Glen Cameron, Cochin, 200 bls. cotton waste.
Textile Paper Supply Corp., Glen Cameron, Cochin, 100 bls. cotton waste.
Ayres W. C. Jones, Glen Cameron, Cochin, 100 bls. cotton waste.

### GLUESTOCK, ETC.

H. Remis, Taubate, Rio de Janiero, 530 bls. gluestock.
J. Gorvers, Lotta Dan, Buenaventura, 53 bdls. dry hidecuttings.

### CASEIN

Commercial National Bank, Sophocles, Buenos Aires, 10,481 bags.
Paul A. Dunkel & Co., Inc., Sweepstakes, Buenos Aires, 1900 bags, 95,000 kilos.
National Casein Sales Co., Sweepstakes, Buenos Aires, 1016 bags (ground lactic casein), 50,800 kilos.

## PHILADELPHIA IMPORTS

WEEK ENDING MAY 11, 1946

Jay Madden Corp., Denison Victory, Abo, 228 rolls wrapping paper.

## BOSTON IMPORTS

WEEK ENDING MAY 11, 1946

Commercial National Bank, Sophocles, Buenos Aires, 5519 bags casein.

## BALTIMORE IMPORTS

WEEK ENDING MAY 11, 1946

Pulp Specialties, Inc., Kanangoora, Gothenburg, 385 bls. sulphite pulp, 535 tons.

## Upward Import Trend Is Traced by Bullock

An upsurgae of imports of printing paper is under way according to Warren B. Bullock, Manager of the Import Committee of the American Paper Industry. In a report to the industry Mr. Bullock says that imports of printing paper, principally in groundwood grades have increased rapidly since the first of the year. In 1938 before the duty rate was reduced by the Reciprocal Trade Agreement with Canada imports totaled less than 10,000 tons. In 1945 imports totaled about 30,000 tons, but in January imports totaled 3,600 tons, rising in February to 4,400 tons, or at the rate of over 50,000 tons per year. These totals do not include hanging paper raw stock.

Kraft paper, both machine glazed and machine finished has begun to arrive in small quantities from Sweden and Finland. The sale price of the imported paper is understood to be at the American ceiling price, however, not at the lower prices which prevailed before the war.

## OIT Restricts Export Of Waste Papers

WASHINGTON, D. C.—At the request of the Office of War Mobilization and Reconversion, control has been instituted over exportation from the Unitel States to countries other than Canada of wastepaper and over-issued newspapers, it was announced today by the Office of International Trade of the Department of Commerce. Total exports of this material during each of the first three months of this year were less than half of one per cent of supply, OIT said. Moreover, two-thirds of the amount shipped abroad has gone to Canada. Hence, less than one-sixth of one per cent of the supply has been sent to countries within OIT export control jurisdiction.

Normal controls are not invoked when such minor portions of total U.S. supply are being shipped abroad, OIT pointed out. Action was taken in this case at the initial request of the Civilian Production Administration in view of the shortage of wastepaper in the West Coast area.